Practice Toolkit

Sleep, food, movement, money, work and more

- **Protocols for daily life, and a facilitator kit for groups**

Open-source harm-reduction framework. Not medical advice. Use alongside clinical care.

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How to use this toolkit

These are the practical chapters: sleep, food, movement, money, work, relationships, and what to do after a lapse. Each one gives a purpose, a checklist, common pitfalls, and when to get help. Pick the chapter that matches what is hard right now; you do not need to read them in order.

Material about genetics, supplements, peptides, gut-microbiome treatments and other experimental ideas is labelled **[Emerging]** or **[Kernel hypothesis]** and is for use only with a physician. No chapter gives doses or taper schedules.

PART A. CRISIS, BODY, BRAIN AND HABITS

Resources and numbers in this part are US-centred. Outside the US, use your local emergency number and crisis lines. This is harm-reduction and educational material, not medical advice. Evidence labels used throughout: widely accepted clinical fact; plausible, limited or mixed evidence; the Kernel's own framework, not trial- tested. Untagged text is practical advice or well-established basics. For the shared rules that apply everywhere, see the Handbook chapter "The 12 Safety Rules."

Chapters in this part

1. Emergency triage: the first hour of a crisis
2. Know your type: self-assessment and testing
3. Sleep
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1. Emergency triage: the first hour of a crisis

> **In this chapter.** What to do when your nervous system is in alarm and you cannot think straight. The order is: check for danger, calm the body, check basic needs, ground, then plan. You are not trying to solve anything yet.

Emergency box Call 911 now if: you have a plan and means to harm yourself or someone else; you hear voices telling you to hurt yourself or others; you took a substance and have chest pain, trouble breathing, seizure, confusion or loss of consciousness; you are in alcohol or benzodiazepine withdrawal with tremor, hallucinations or a seizure history; your resting heart rate stays above about 150; you cannot stop vomiting and are getting dehydrated; someone else is in immediate danger because of you. **Call or text 988** (Suicide & Crisis Lifeline) for suicidal thoughts without an immediate plan, or if you are unsure whether it is an emergency. **Crisis Text Line:** text HOME to 741741. **SAMHSA Helpline:** 1-800-662-4357. **Poison Control:** 1-800-222-1222. **Suspected opioid overdose:** call 911, give naloxone, and keep giving rescue breaths. Street supply may contain fentanyl, nitazenes, xylazine or medetomidine. Naloxone does not reverse xylazine or medetomidine, and nitazene overdoses may need repeated doses, so always call 911 even if the person wakes up.

Purpose

In a crisis the brain's alarm system takes over. It is good at keeping you alive for the next thirty seconds and bad at planning, judging risk or regulating feeling. Its messages feel true. The goal of this protocol is simple: don't make it worse, settle the body, wait for clear thinking to return.

What to do (in order)

1.**Rule out emergencies** using the box above. If any applies, stop reading and call. 2.**Build a shelter.** Turn off audio and silence the phone. Dim harsh lights. Say "I need quiet, I'll talk later" to anyone nearby, or move away from anyone aggressive. Put screens away: no news, no social media, no messages. Fix temperature (cool down or warm up). 3.**Slow your breathing.** Breathe in through the nose for 4, hold for 7, out through the mouth for 8. Repeat four times. A long exhale calms the body. If holding your breath makes you dizzy or more anxious, shorten the hold and simply make the exhale longer than the inhale. 4.**Drink about 16 oz (500 ml) of water.** Skip alcohol, large amounts of caffeine, and sugary drinks alone. 5.**Check the body (HALT + pain).** Hungry? Eat protein if you haven't eaten in four hours. Angry? Say it out loud: "I am angry about ___." Lonely? Text one safe person: "I'm having a hard time" is enough. Tired? Under four hours of sleep in the past 24 means sleep comes first; return to this chapter after rest. Sick or in pain? Treat that. Sleep loss alone can cause paranoid thinking, volatility and hallucination-like experiences. 6.**Ground through the senses.** Name 5 things you see, 4 you can touch, 3 you hear, 2 you smell, 1 you taste. Say them aloud. 7.**If still overwhelmed, use cold.** Hold your breath and put your face in a bowl of cold water for 15 to 30 seconds, or hold a cold wet cloth on your face and neck for a minute. Skip this if you have a heart-rhythm condition or have been told to avoid it; use cold on the wrists instead. 8.**Say a containment script aloud.** For example: "This is a crisis. Crises are temporary. I am not dying. My alarm system is telling me I'm in danger and I'm not. I don't have to fix anything right now. I breathe, I drink water, I wait." 9.**Afterwards:** make no major decisions for 24 hours, arrange a check-in with a sponsor, therapist or friend within 24 hours, and write down what triggered it, what your body state was, and what helped.

Decision table

What you notice	What to do
Plan, means and intent to self-harm	911 now
Suicidal thoughts, no plan	988 call or text
Voices commanding harm	911 now
Resting heart rate sustained above ~150	911 or emergency room
Alcohol or benzodiazepine withdrawal with tremor, hallucinations, or seizure history	911 or ER immediately

Opioid withdrawal, uncomfortable but stable Continue this protocol and arrange medical support

Panic that feels like dying but no physical Breathing and grounding above danger

Overwhelming but non-dangerous emotionContinue the steps; then the next chapters

Pitfalls

- **"I'm fine, I don't need help"** is one common lie of a crisis. **"This is the end, nothing will ever be okay"** is the other. When either is loud, follow the table, not the feeling.
- Doing everything at once. Do only the current step.
- Treating a panic attack as a heart attack, or the reverse. If chest pain is new, severe, or comes with other symptoms, get it checked.
- Shame after a lapse. A lapse is information and also a medical risk: tolerance has dropped, and a break is not a reset. If you used after a period of not using, use less than before, never alone, with naloxone nearby. See the chapter on compulsive loops and "The 12 Safety Rules."
- Using the phone to cope. It usually adds stimulation.

When to get help

Any item in the emergency box. Also: no sleep for more than 24 hours with racing or odd thoughts; thoughts of harming yourself that keep returning; or a crisis that repeats weekly. Tell your prescriber, therapist or sponsor, and write your emergency contacts (three names and numbers) somewhere visible *before* the next crisis.

> KEY POINTS
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> **Key points** - A crisis is a storm in the nervous system, not a verdict on you. - Danger first, then breath, water, body check, grounding. - Sleep under four hours: sleep before analysis. - 911 for danger, 988 for crisis support, naloxone for opioids. - Keep numbers written down now.

2. Know your type: self-assessment and testing

> **In this chapter.** A plain-language tour of the Kernel's "phenotype" idea: people differ in how they clear stress chemicals, process medicines, and respond to reward, so one-size-fits-all advice often fails. The genetics are presented as hypotheses. Use observation and a clinician, not DNA results alone.

Honest limits. [Kernel hypothesis] Mapping a gene to a personality or an addiction type is not established science. [Established] Genes are risk factors, not destiny, and consumer genetic tests are not diagnoses. Never delay starting recovery steps, safety steps or treatment while waiting for test results.

Purpose

To replace self-blame ("I should have been able to just do this") with useful questions: What did my substance do for me? Which advice has worked for me and which hasn't? What should my prescriber know?

The main ideas

Idea	What the Kernel says	Evidence label
COMT "Warrior / Sage" Idea	A faster version of an enzyme [Kernel hypothesis]. COMT's that clears dopamine (Val/Val, "Warrior") may mean a flat baseline and a pull to stimulation and risk; a slower version (Met/Met, "Sage/Worrier") may mean What the Kernel says higher baseline, more anxiety and rumination, and a pull to depressants (alcohol, benzodiazepines, opioids, cannabis). Val/Met is in between.	effects on stress and cognition are studied, but links to substance choice are mixed. Evidence label
MTHFR (methylation)	Common variants may reduce conversion of folate to its active form, with possible effects on mood, energy and homocysteine. Methylated B vitamins are suggested for some.	[Emerging] for homocysteine; [Kernel hypothesis] for mood and addiction links. Ask a clinician; do not self-dose.

Idea	What the Kernel says	Evidence label
CYP450 (medicine metabolism)	Variants can make medicines hit unusually hard, weakly, or fast (for example with codeine, tramadol, antidepressants).	**[Established]** that CYP variants affect many drugs; pharmacogenomic panels are used clinically.
Reward deficiency	A chronic "something is missing" feeling, early onset, several addictions, ADHD traits.	**[Kernel hypothesis]** as a label for a pattern; the underlying DRD2 link is **[Emerging]**.
What to do		

1.**Notice your history.** Which substances pulled hardest: stimulants (stimulation-seeking) or sedatives (calm-seeking)? Is caffeine calming, jittery, or nothing? Do you get anxious under pressure or flat without it? 2.**Note medication responses.** Pain pills that did nothing or hit very hard. Antidepressants that caused severe side effects at normal doses or never worked. Benzodiazepines that hit very hard or barely worked. Write these down; they are useful information for any prescriber. 3.**Note family history.** Addiction, depression, anxiety, heart disease, unusual medication reactions in blood relatives. 4.**Use it to tailor, not to label.**

- o*Warrior-leaning:* build healthy intensity (strong exercise, competition, projects with deadlines, novelty) and watch hard for addiction transfer (see the compulsive-loops chapter).
- o*Sage-leaning:* make calm a central practice (quiet, nature, breathwork, routine, less stimulation), reduce caffeine, treat anxiety as a core condition.
- o*In between or unsure:* observe which way you tilt over a few weeks.

5.**If testing is wanted:** a pharmacogenomic panel ordered by a prescriber is the most clinically useful kind, especially before starting antidepressants or addiction medicines. Insurance often covers it when starting psychiatric medicine. Consumer DNA tests plus third-party interpretation tools give raw data that needs professional interpretation. 6.**Use supplements only with a clinician or pharmacist.** Methylated B vitamins, tyrosine, adaptogens and similar products can interact with medicines or worsen bipolar disorder, anxiety, hypertension, or psychosis. Dose with your clinician and pharmacist. Avoid dopamine-raising supplements such as tyrosine if you have psychotic symptoms.

Pitfalls

- Treating "I'm a Met/Met" as a new identity label. It is a hypothesis about a starting condition.
- Believing a score on a self-quiz proves a gene. Quizzes give a rough working hypothesis only.
- Skipping basics (sleep, food, meetings, treatment) to chase genetics.
- Starting supplements because of a quiz result, especially "folic acid is bad for me" claims. Ask first.

When to get help

Medicines that cause severe side effects at normal doses; a family history of unusual drug reactions; before any new psychiatric or addiction medicine; if a quiz result leads you to stop a prescribed medicine (never do that; see the medications chapter).

> FOR CLINICIANS
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> **For clinicians.** Pharmacogenomic results (CYP2D6, CYP2C19 and others) have a role in prescribing; the Kernel's COMT/MTHFR/DRD2 typing of addiction risk is a framework, not a validated stratifier. Self-report questionnaires measure perception rather than biology, and patients may learn to exaggerate when honest reports are met with scepticism. A collaborative, data-informed encounter reduces that pressure.

> KEY POINTS
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> **Key points** - Types are starting conditions, not destiny. - Your own history of substance choice, medicine response and family patterns is useful data. - Test through a prescriber when it will change a decision; don't wait for it to begin. - No supplement or dose decisions from a quiz.

3. Sleep

> **In this chapter.** Why sleep matters more than any other single repair task, how substances scrambled it, and a simple set of conditions that reset it over weeks. Insomnia in early recovery is normal and temporary.

Emergency box. Alcohol, benzodiazepine, Z-drug or GHB withdrawal can cause seizures and delirium. Poor sleep with tremor, sweats, confusion or hallucinations is a medical emergency (911). Never stop these substances suddenly. Sleep loss with racing thoughts, no need for sleep, or hearing/seeing things needs psychiatric care.

What sleep does [Established]

Sleep runs in roughly 90-minute cycles. Deep sleep dominates early in the night (physical repair, immune function); REM sleep dominates later (emotional processing, memory). Cutting the night short mainly costs REM.

Substance	Effect on sleep	In early recovery
Alcohol	Sedating, not restorative; REM suppressed; fragmented, early waking	REM rebound: vivid or disturbing dreams for weeks
Stimulants	Prevent sleep; huge sleep debt	Oversleeping for days to weeks
Opioids	Drowsy but poor architecture; linked to sleep apnea	Severe insomnia in withdrawal
Cannabis	May ease onset but reduces REM	Vivid dreams and insomnia in the first weeks
Benzodiazepines / Z-drugs	Induce sleep, suppress deep and REM sleep	Rebound insomnia, often worse than before
What to do: a checklist		

- ☐ **Same wake time every day**, including weekends. This is the anchor, more important than bedtime.
- ☐ **Morning light** within 30 to 60 minutes of waking: 10 to 30 minutes outdoors (cloudy days still help). A bright light box is an option if natural light isn't available.
- ☐ **Evening darkness:** dim lights 2 to 3 hours before bed, screens off 1 to 2 hours before. Warm amber light if you need some.
- ☐ **Cool room**, roughly 65 to 68 °F (18 to 20 °C). A warm bath 1 to 2 hours before bed helps the temperature drop.
- ☐ **Dark, quiet bedroom.** Blackout curtains, a fan or white noise. Phone charges outside the room; use an alarm clock.
- ☐ **Bed is for sleep.** No work or screens in bed. If not asleep after about 20 minutes, get up, do something quiet in dim light, return when drowsy.
- ☐ **Ninety-minute wind-down,** the same each night: dim lights and stop work; 60 minutes before, no screens, bath, paper reading or journaling; 30 minutes before, breathwork or a body scan.
- ☐ **Naps** only before 3 PM and under 20 to 30 minutes.
- ☐ **Aim for rest, not sleep.** Trying hard to sleep keeps you alert. Lie in the dark and rest.

Supplements: only as support

Magnesium glycinate and L-theanine are commonly used and generally low-risk [Emerging for sleep]; melatonin can help shift the sleep window and is meant for short-term use. **Dose with your clinician or pharmacist.** Avoid: diphenhydramine and similar sleep antihistamines, alcohol, cannabis during recovery,

and long-term sedative-hypnotics, which replace one dependence with another. Check kidney disease, medicines and pregnancy before using magnesium.

Pitfalls

- Sleeping in after a bad night; it resets the clock backwards.
- Lying awake clock-watching. Cover the clock.
- Using alcohol, cannabis or over-the-counter sleep aids to “just get through” the first weeks.
- Expecting results in a few days. Clock reset takes weeks.
- Missing sleep apnea (loud snoring, daytime sleepiness, opioid use).

When to get help

Seeing a doctor is warranted if insomnia lasts beyond about a month with good habits, if you snore heavily or stop breathing at night, if you rely on sedatives, if you are depressed or having suicidal thoughts (988), or if you have not slept for more than a day with unusual thoughts.

> KEY POINTS
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> **Key points** - Insomnia in early recovery is expected; the clock resets over weeks. - Wake time, morning light, evening dark, cool room. - The bed’s job is sleep; the task in bed is rest. - Sedative sleep medicines trade one dependence for another.

4. Nutrition

> **In this chapter.** The brain builds its chemistry from food. Years of skipped meals, sugar and substances leave gaps. This chapter is a plain eating pattern, not a diet.

Purpose

Protein supplies the amino acids the brain uses to make dopamine (from tyrosine), serotonin (from tryptophan), and GABA (from glutamate with B6, zinc and magnesium) [Established as basic biochemistry]. Blood-sugar crashes feel like anxiety and craving. Eating regularly is part of treatment.

What to do

- ☐ **Eat protein at breakfast** (for example eggs, Greek yogurt, a protein shake). The Kernel treats morning protein as the day’s anchor.

- ☐ **Spread protein through the day.** A common target in the Kernel is roughly 0.7 to 1 g per pound of body weight, in 30 to 50 g portions per meal. If you have kidney disease, check with your doctor first.
- ☐ **Use the plate:** half vegetables, a quarter protein, a quarter complex carbohydrate (oats, beans, brown rice, sweet potato), with healthy fat (olive oil, avocado, nuts).
- ☐ **Never eat carbohydrates alone.** Add protein, fat or fibre to blunt the spike-and-crash. Minimise refined sugar, juice, and white-flour foods.
- ☐ **Eat fatty fish** two to three times a week (salmon, sardines, mackerel). Fish oil is an option if you don't eat fish; dose with your clinician, especially if you take blood thinners.
- ☐ **Limit** trans fats, oils reused for deep frying, and ultra-processed foods.
- ☐ **Evening:** protein with complex carbohydrate supports serotonin and sleep.
- ☐ **Fermented foods** (yogurt, kefir, kimchi, sauerkraut) add GABA-producing bacteria; see the gut chapter.

Micronutrients that matter

Nutrient	Why it matters	Notes
B vitamins (B6, B12, folate)	Needed at every step of neurotransmitter synthesis	A B-complex is common.
B1 (thiamine)	Heavy alcohol use can cause deficiency, and Wernicke's encephalopathy is a serious emergency **[Established]**	If you drank heavily, ask a clinician about thiamine; confusion, unsteady walking or odd eye movements need emergency care.
Magnesium	Calming; supports GABA and sleep; often low	Check kidney function and medicines first.
Zinc	Neurotransmitter synthesis, immune function	Dietary first.
Vitamin D	Mood and immune function; commonly low	Ask for a blood test.
Iron	Needed for dopamine synthesis	**Only if a blood test shows deficiency**; excess is harmful.

Supplement doses are individual: **dose with your clinician or pharmacist.**

Pitfalls

- Treating food as a moral issue. This is supply, not virtue.
- Replacing a substance with sugar, caffeine or energy drinks. See the compulsive-loops chapter.

- Caffeine: the Kernel suggests cutting back for people who feel anxious or sleep badly on it. Not every caffeine pattern needs to end, but caffeine hits harder in early recovery and after quitting nicotine.
- Starting extreme diets or long fasts in early recovery (see the water chapter).
- Taking iron or high-dose supplements “just in case”.

When to get help

See a doctor if you can’t eat or keep food down, lose weight quickly, are vomiting or have diarrhea for days (especially in withdrawal), have a history of an eating disorder, or if confusion, vision changes or unsteady gait appear after heavy drinking. A dietitian is useful for medical conditions.

> KEY POINTS
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> **Key points** - Protein at breakfast, vegetables at meals, no naked carbohydrates. - Fatty fish for omega-3. - Test before iron; ask about thiamine if you drank heavily. - Food is part of treatment, not a punishment.

5. Water, minerals and fasting

> **In this chapter.** Dehydration and mineral loss make anxiety, fog and cramps worse and mimic psychiatric symptoms. How to hydrate sensibly, and why fasting should wait.

Emergency box. Seek urgent care for repeated vomiting or diarrhea, confusion, fainting, a racing or irregular heartbeat, severe muscle weakness, or seizure. These can signal serious electrolyte problems. Withdrawal from alcohol or benzodiazepines is a medical emergency (see “The 12 Safety Rules”).

Why it matters

Nerves and the heart run on electrical signals carried by sodium, potassium, magnesium and calcium **[Established]**. Alcohol flushes minerals; stimulants burn through them and suppress appetite; opioids blunt thirst, cause vomiting and (in withdrawal) heavy sweating. Magnesium deficiency is a common suspect behind cramps, restless legs, poor sleep and jitteriness [Established that it causes these; how often it drives anxiety is uncertain].

What to do

- ☐ **A rough daily target:** about half your body weight in pounds, as ounces of fluid (for example 160 lb is about 80 oz), more when sweating, exercising or in heat. Heart, kidney or liver disease, and fluid-restricted conditions need individual advice.

- ☐ **Drink 16 to 20 oz of water on waking.** Sip through the day; ease off 2 to 3 hours before bed.
- ☐ **Watch urine colour:** pale yellow is the goal. Dark means drink more.
- ☐ **Water alone may not be enough if you've lost minerals:** use food (broth, avocado, potatoes, spinach, nuts, seeds, leafy greens) or a low-sugar electrolyte product. Avoid sugary sports drinks.
- ☐ **Check first** if you have high blood pressure, heart or kidney disease, or take lithium, diuretics or blood-pressure drugs. Added salt or potassium can be unsafe; lithium levels are sensitive to sodium and fluid changes.
- ☐ **Magnesium:** glycinate in the evening is the Kernel's favourite form for sleep and anxiety; citrate loosens stools (useful for opioid-related constipation); oxide is poorly absorbed. Epsom salt baths are a gentle option. Dose with your clinician; avoid in kidney disease without advice.
- ☐ **Don't overdo water.** Drinking very large volumes without salt can lower sodium dangerously (headache, confusion, seizures).

Fasting and meal timing

The Kernel's useful idea is "fast from fuel, not from water." Eating resets a gut-cleaning rhythm, so a gap of at least four to five hours between meals and a long overnight break are reasonable **[Emerging]**. Claims about autophagy and "deep cell repair" from longer fasts are **[Emerging]**; the effects in people recovering from addiction are not tested.

Stage	Suggested approach
First weeks (acute recovery or withdrawal)	**No fasting or calorie restriction.** Focus on fluids, minerals, and regular meals.
About weeks 4 to 12	A gentle 12 to 14 hour overnight break at most, if you are eating well.
Later, if stable and well nourished	Time-restricted eating is optional.

Do not fast with a history of an eating disorder, diabetes or other conditions needing meals or medicines, pregnancy, or while underweight, without medical advice.

Pitfalls

- Assuming mood problems are purely psychological before checking food, fluids, sleep and medical causes.
- Chugging large amounts of plain water.
- High-sugar "recovery" drinks.
- Using fasting as a new compulsion or as a way to lose control of eating.

- Salt-loading with high blood pressure.

When to get help

Dizziness on standing, very low urine output, dark urine, persistent vomiting, palpitations, or muscle weakness: see a doctor. Blood tests can check electrolytes, magnesium and kidney function.

> KEY POINTS
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> **Key points** - Check fluids and minerals before blaming psychology. - Hydrate steadily; avoid extremes either way. - Ask first if you have heart, kidney or blood-pressure conditions or take lithium. - No fasting during early recovery.

6. Movement

> **In this chapter.** Movement is one of the best-supported tools for mood, sleep, stress and craving. It does not replace treatment. Start with walking.

Emergency box. Stop and get urgent help for chest pain, severe breathlessness, fainting, or a racing or irregular heartbeat during exercise. If you recently withdrew from stimulants, alcohol or opioids, or have heart problems, check with a clinician before vigorous exercise.

Purpose

Exercise raises endorphins, endocannabinoids, dopamine, serotonin, norepinephrine and BDNF [Established that exercise improves mood, sleep and anxiety; the specific chemical claims are simplified]. It also burns off stress hormones and keeps lymph flowing. Exercise is comparable to antidepressants for mild-to-moderate depression in some studies [Established, with caveats]. The Kernel's line that endocannabinoids, not endorphins, create the "runner's high" is too simple: both contribute.

What to do

☐ **Move every day.** Walking counts. Thirty minutes is a good baseline; ten to twenty is enough to begin.

☐ **Match the stage:**

Stage	Focus
Early recovery (to about 90 days)	Daily walks of 30 to 60 min; gentle strength twice a week. Consistency over intensity. Overtraining adds stress.

Stage	Focus
Mid recovery (3 to 12 months)	More structured cardio and strength; add activities you enjoy.
Long term	Full program, sport or community movement.

- ☐ **Mix types:** aerobic 3 to 5 times a week (conversational "zone 2" pace is the most sustainable); strength 2 to 4 times a week; yoga or slow flow 1 to 3 times a week for calm and sleep; high-intensity intervals **at most once or twice a week, and only once you have a fitness base.**
- ☐ **Time it:** morning movement plus outdoor light anchors your day; move after a stressful moment to burn off the arousal; keep evenings gentle (walking, yoga) so sleep isn't delayed.
- ☐ **Use it for cravings:** ten minutes of movement before deciding anything.
- ☐ **Make it social or fun** when you can.

Pitfalls

- Going hard on day one and quitting after injury or exhaustion.
- Using exercise as the new compulsion (the transfer risk; see the compulsive-loops chapter). Signs: you train through injury, skip recovery practices, or feel panicked when you miss a session.
- Evening hard sessions that wreck sleep.
- High-intensity exercise on top of withdrawal or very little food.
- Music dependency for every session: keep some sessions quiet.

When to get help

New chest pain, fainting, injury that doesn't settle, or excessive exercise as a way to purge or punish. Fitness professionals and physical therapists can help a beginner, someone with an old injury, or someone returning after opioid or alcohol damage.

> KEY POINTS
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> **Key points** - Daily walking is real exercise. - Build gradually; intensity can wait. - Mornings for energy, evenings for calm. - Watch for exercise becoming a compulsion.

7. The gut and digestion

> **In this chapter.** The gut and brain talk constantly. Substances damage the gut, and a gentler eating pattern may help mood, sleep and cravings. Much of the Kernel's gut material is plausible but early-stage; treat it as support, not treatment.

What is established and what is not

- **[Established]** The gut has its own large nervous system. Gut bacteria and gut cells make much of the body's serotonin and some dopamine and GABA. The vagus nerve carries signals both ways.
- **[Established]** Heavy alcohol use harms the gut lining and microbiome; opioids slow the gut and cause constipation; stimulants and heavy cannabis use can disturb appetite and motility.
- **[Emerging]** Gut-made serotonin does not directly cross into the brain, so "90% of serotonin is made in the gut" does not mean the gut controls mood. The microbiome- gut-brain axis may influence mood, anxiety and inflammation.
- **[Kernel hypothesis]** "Bacteria and Candida send you cravings for sugar and alcohol." Plausible for sugar cravings and gut signals, unproven for alcohol or drug cravings.

What to do: a five-step approach

The Kernel organises restoration into five steps (Remove, Replace, Reinoculate, Repair, Rebalance). 1. **Remove** what harms the gut: alcohol, refined sugar, ultra-processed food and additives, unnecessary antibiotics, regular heavy NSAID use (ask your doctor before changing any prescribed drug), and chronic stress. 2. **Replace digestive capacity:** eat slowly, chew well, eat bitter greens, sit down without screens. Digestive enzymes, apple cider vinegar and similar products are **[Emerging]** and not for everyone (reflux, ulcers or tooth-enamel problems). 3. **Reinoculate:** one to two servings a day of fermented foods (live-culture yogurt, kefir, kimchi, sauerkraut, miso, tempeh, low-sugar kombucha). Probiotic supplements are optional; some strains have early evidence for mood and anxiety **[Emerging]**. Increase slowly; bloating usually settles in one to two weeks. **Avoid probiotics if immunocompromised or seriously ill without asking your doctor.** 4. **Repair:** protein, bone broth, omega-3 fats. L-glutamine, zinc carnosine, collagen and similar are **[Emerging]**; ask a clinician or pharmacist. 5. **Rebalance:** a variety of plant foods (the Kernel aims for about thirty types a week), prebiotic foods such as onions, garlic, oats and green bananas.

Craving moments: drink water, eat a protein-and-fat snack, and plan the next meal with enough protein. The Kernel suggests that cravings often follow blood-sugar dips and missed meals; tracking when cravings hit can help.

Timeline

Many people report changes in weeks; the Kernel projects gut-lining repair over 3 to 6 months and full rebalancing over 6 to 12 **[Kernel hypothesis]**.

Pitfalls

- Expecting probiotics to fix addiction. They are one small piece.
- Overdoing eliminations and becoming rigid about food.
- Restricting calories “to heal the gut” in early recovery.
- Skipping medical causes of chronic abdominal pain, bleeding, black stools, unexplained weight loss, or jaundice.
- Taking many supplements at once; start one thing at a time.

When to get help

Blood in stool or vomit, black stools, severe or persistent abdominal pain, persistent vomiting (including repeated vomiting episodes with heavy cannabis use), weight loss, jaundice, or severe constipation with opioid use. These need medical care.

> KEY POINTS
>
> **Key points** - Evidence is early; use gut care as a gentle extra. - Fermented foods, fibre variety, regular protein, less sugar and alcohol. - Probiotics and gut supplements are optional and need a quick check with a clinician. - Persistent gut symptoms need medical review.

8. Rewiring the brain: repetition and timelines

> **In this chapter.** The brain changes with use. Addiction practised one loop thousands of times; recovery builds a new loop by repeating a different response. This chapter explains how to do that and corrects the myth of permanent damage with realistic timelines.

The core idea

[Established] Repeated behaviour strengthens neural pathways (“neurons that fire together wire together”). A trigger-to-craving-to-use circuit that has run for years fires fast and automatically. The new circuit (trigger, pause, coping action) starts weak and feels awkward. Both exist; the one you use more becomes dominant.

Timelines (treat as rough, not guarantees)

Window	What often happens
About 3 weeks	Practices start to feel a little easier.
About 2 months (average 66 days in habit research, with wide variation)	A new routine starts to feel automatic.
About 90 days	New habits are more stable; many people report fewer cravings.
1 to 2 years	Deeper reorganisation.

Some research shows brain reward systems, grey matter and metabolism partially recovering with sustained abstinence, over months to a couple of years, with variation by substance and person [Established in general, individual timelines vary; the Kernel's specific percentages are Kernel projections]. "Once an addict, always an addict" overstates; but recovery is not guaranteed by time alone, and a vulnerability remains.

What to do

1.**Pick one specific behaviour.** "Call my sponsor when a craving starts" can be wired; "reach out more" can't. 2.**Tie it to a cue and schedule it** ("after morning coffee, ten minutes of breathing"; "at seven, the evening walk"). 3.**Track it** on a calendar or app. 4.**Protect the first 30 days.** The rule: never miss twice in a row. 5.**Rewire the high-risk moments:**

- oCraving: trigger, craving, healthy action (call, walk, breathe, urge surfing) instead of use.
- oStress: pause, five breaths, call, journal, move. Practise at low stress first.
- oEvenings: plan them (exercise, a meeting, reading).
- oSocial events: bring a sober companion, hold a drink that is not alcohol, set a time limit, know your exit.

6.**Feed the conditions that help change:** sleep, exercise, novelty and learning, nutrition, stress management, social contact, and mindfulness practice. 7.**Remove what blocks change:** sleep loss, chronic stress, inactivity, isolation, ongoing substance use.

Boosters people ask about

Aerobic exercise, good sleep, daylight, social contact and learning new skills have the best support for brain health [Established to Emerging]. Cold exposure, intermittent fasting, lion's mane, curcumin and similar are [Emerging or Kernel hypothesis]; see the optional-extras chapter. Numbers like "BDNF rises 300%" are acute lab findings, not recovery guarantees.

Pitfalls

- Waiting to “feel ready” instead of practising.
- Making the plan too big (five new habits at once).
- Expecting the old craving to vanish quickly; it fades with disuse, not by argument.
- Treating a lapse as proof the brain is broken (a lapse is information and a medical risk; see the emergency chapter and “The 12 Safety Rules”).
- Reading about change instead of doing it.

When to get help

If you cannot keep any new practice going for two weeks, if low mood, anxiety or trauma is getting in the way, or if cravings are intense and frequent. Treatment, medication for addiction, therapy and peer support work alongside these habits. Do not substitute habit tracking for treatment.

> KEY POINTS
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> **Key points** - The brain changes through repetition, not intention. - Start small and specific, tied to a cue. - Never miss twice in a row. - Timelines are real but vary; recovery is not a permanent injury.

9. Rebuilding pleasure: anhedonia and the “dopamine menu”

> **In this chapter.** Early recovery often feels flat. Normal pleasures barely register. This chapter explains why, how to retrain your attention to pleasure, and how to build a menu of rewards so sobriety isn’t a grey waiting room.

Emergency box. Flatness can be a symptom of depression. Hopelessness, thoughts of not wanting to be alive, or thoughts of suicide: call or text **988**, or **911** if in immediate danger. “I need to use just to feel something” is a relapse warning; use the “when nothing sounds good” steps below and tell someone today.

Why things feel flat

[Established] Repeated large dopamine surges lead the reward system to turn down its sensitivity, so ordinary pleasures register weakly. This is anhedonia. Dopamine is as much about motivation and anticipation as pleasure. **[Emerging]** Sensitivity improves over weeks to months of abstinence. The Kernel’s picture: the world hasn’t lost its colour; the “sensor” is out of calibration and recovers if the flood stops.

What to do

A. Lower the flood (the "fast") - **Tier 1: stop entirely:** substances, gambling, pornography, binge-eating and sugar flooding, and any active behavioural addiction. - **Tier 2: reduce a lot:** social media scrolling, loot-box and reward-loop games, autoplay binge-watching, outrage news, swipe apps. Set windows and time limits (see the screens chapter). - **Tier 3: notice:** excess caffeine, constant background audio, constant snacking, compulsive browsing. The question is "need or habit?" - **Allow boredom.** The Kernel treats boredom as the recalibration zone. Sit with it for five minutes before reaching for stimulation. If boredom turns into dread or hopelessness, that's a signal to talk to someone, not to push through.

[Kernel hypothesis] "Dopamine fasting" as a precise technique is a popular idea rather than tested science; the useful part is cutting down on stimulation you can't control and doing things that take effort.

B. Retrain detection of small pleasure Practise noticing sensory pleasures (first sip of coffee, warm shower, sun on your face), small accomplishments (a made bed, a finished task), connection moments (a smile, a good talk), and nature. To strengthen the signal: *anticipate* it ("this will feel good"), *be present* (no phone), *savour* (slow down), *thank* (a short "that was good"), and *replay* it later.

C. Build the dopamine menu (write it out and post it) - **Appetizers (5 to 30 min), at least ten:** brief movement, sunlight, music, a text or call, a pet, a cold shower, a cup of tea made slowly, ten minutes of doodling or writing. - **Entrees (1 to 4 hours), at least five:** a hard workout or hike, cooking a big meal, a creative or building project, a game night, volunteering, live music, nature outing. - **Desserts (3 to 5, each with a rule):** planned treats that can slip into excess (a restaurant meal, a movie, a game session, a purchase). Rules: plan it, savour it, limit it, space it, no guilt. - **Tune it to you:** more intensity and novelty if you lean Warrior; gentler, predictable pleasures if you lean Sage **[Kernel hypothesis]**; varied sources if you have always needed variety.

D. Schedule anticipation. Keep something on the calendar at each horizon: today (one appetizer at a set time), this week (one entree), this month (a day trip or event), this quarter and this year. Spend ten minutes on Sunday planning the week.

E. When nothing sounds good (the danger zone) 1. Move your body first (ten jumping jacks, a walk round the block). 2. Text or call one person, even just "hey." 3. Do only the first two minutes of the smallest appetizer. 4. Lower the bar: you do not need to enjoy it, you need to do it. 5. Remind yourself that this grey state is temporary and a depleted brain exaggerates it.

Pitfalls

- Waiting to feel better before acting. Action comes first; feeling follows.
- Swapping the substance for another dopamine source and calling it recovery.
- Turning desserts into appetizers (daily, impulsive).
- Ignoring depression because "it's just anhedonia."
- Perfectionism about detecting pleasure.

When to get help

Flatness lasting more than a few weeks with poor sleep, appetite changes, hopelessness or thoughts of self-harm is depression until proven otherwise. See a clinician. Treatment for depression, including therapy and sometimes medication, is part of recovery.

> KEY POINTS
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> **Key points** - Flatness is common and usually improves with time without the flood. - Do pleasant things before you feel like it. - Have a written menu of appetizers, entrees and rule- bound desserts. - Persistent flatness plus hopelessness needs care now.

10. Sound and music

> **In this chapter.** Music reaches the emotional brain before the thinking brain can argue. You can use it deliberately: audit what you listen to, widen the range, match or counter a mood, and build playlists before you need them. Brainwave-tone tools are optional extras.

Safety notes. Music does not manage alcohol, benzodiazepine, or GHB withdrawal; those need medical care. Do not use binaural or pulsed tones while driving or operating machinery; people with epilepsy or seizure history should ask a doctor first (pulsed sound and light can matter).

Why it matters

Songs carry stories. When one resonates, you can adopt its story as your own: the tortured artist, the outlaw, the party-forever anthem, the beautiful victim. **[Kernel hypothesis]** These narratives can quietly shape identity and permission. Music that always matches your mood can lock you into it (mood-matching), and a single genre limits your emotional range. The sound environment also affects arousal **[Established]**: tempo, volume and predictability change heart rate and tension.

What to do

1.**Run a lyric audit.** List your 25 most-played songs. For each, note the narrative (what role do you adopt?), the instruction (what does it tell you to do or believe?), and the effect (uplifts, confirms, or circles with no exit?). Flag songs that glorify use, romanticise self- destruction, reinforce permanent victimhood, or trigger cravings. These are not “bad songs”, they are poor operating instructions for right now. 2.**Add before you subtract.** Weeks 1-2: just notice what you play and how it feels. Weeks 3-4: add new playlists alongside the old. Weeks 5-8: aim for about half new material and use old material only when you’re stable. From about week 9: reduce high-risk music. Total bans tend to backfire. 3.**Diversify.** Elder songs that tell the truth about

hardship (blues, folk, gospel, classical), music from other traditions with different emotional ranges, and instrumental music (jazz, classical, ambient) for focus without lyrics. 4.**Use the counter-song.** Mood-matching amplifies. Try the opposite:

What's running	Don't feed it with	Try
Sadness	More sad music	Upbeat, hopeful, rhythmic music that moves the body
Anger	More rage music	Slow, steady, calm sound
Anxiety	Chaotic or fast music	Steady, predictable, low and slow sound; nature sounds
Numbness	Numbing beats	Emotionally open instrumental; let feeling thaw
Hopelessness	Despair validation	Triumphant, "someone made it through" music
Craving	Party or use-associated music Calm regulation or complex	instrumental; ride the 15 to 30 minute wave

5.**Catharsis with an exit.** If you want to feel something fully: say so, set a 15 to 30 minute timer, let it move through you, then switch to a counter-song and move your body. If the feeling is growing rather than completing, stop. 6.**Try "match, then lead."** When agitated, start near your energy level, then step the tempo down over 15 to 20 minutes. When flat, start gently and step up. 7.**Build playlists before you need them:** morning (gradual lift), focus (instrumental), calm (slow, no surprises), emergency counter-mood (one tap away), catharsis (time-limited), movement, evening wind-down, and resilience songs. Archive music tied strongly to using; don't delete, but don't play it for now. 8.**Weekly hygiene:** one piece from outside your usual culture or era; a quick review of what you actually played; one new song.

Tempo guide (rough)

Tempo (BPM)	Typical use
50 to 70	Calming, settling, sleep
80 to 100	Neutral, steady, craving-occupying
100 to 120	Energy, motivation
120 and above	Exercise, release; use cautiously when agitated or panicky
Optional: therapeutic tones	

Binaural beats (need headphones; the brain “hears” a difference tone) and isochronic tones (pulsed tones that work through speakers) are used for sleep (slow tones), calm focus, or concentration. **[Emerging]** Evidence for brainwave entrainment is mixed and small; some people notice nothing. Try a format for two to three weeks; if there’s no effect, stop. Specific frequencies such as 40 Hz for “neural cleanup” and 528 Hz as “healing” are **[Kernel hypothesis]**. Use pure tones or instrumental sound for these, not lyrics.

Pitfalls

- Banning all old music overnight.
- Using sad or angry playlists as a nightly ritual.
- Hours of “catharsis” that never ends.
- Expecting tones or genres to replace sleep, therapy or medicine.
- Loud music that damages hearing.

When to get help

If music or mood spirals into hopelessness, self-harm thoughts (988), intrusive urges, or agitation that doesn’t settle. Music is support; treatment is treatment.

> KEY POINTS
>
> **Key points** - Know what your playlist is telling you. - Add variety rather than banning. - Counter the mood; don’t just match it. - Build playlists before the storm. - Tone tools are optional and unproven.

11. Compulsive loops and addiction transfer

> **In this chapter.** Addiction is a pattern, not just a substance. When one outlet closes, the same hunger can move to gambling, sex or pornography, gaming, shopping, food, screens or work. How to see the loop, block access, and meet the underlying need.

Emergency box. If gambling, debt, shame or hopelessness bring thoughts of suicide, call or text **988** or **911**. **National Problem Gambling Helpline:** 1-800-522-4700 (call or text, US). If sexual urges or behaviour involve children, non-consenting people, or harm to others, stop and contact a licensed therapist or a confidential prevention helpline (for example Stop It Now, 1-888-773-8368, US) and consider legal advice. If you or a partner feel unsafe, call 911 or a domestic-violence line.

The loop

Every addiction runs the same cycle: **trigger, craving, behaviour, relief, depletion/shame, return.** The substance or behaviour is the interchangeable part. The pattern is "using something to change how I feel, and it costs me more than it gives." **[Established]** Reward pathways primed by one addiction can respond more strongly to others (cross-sensitisation).

Is it a new mask? Five questions

1. Is it compulsive: hard to stop once started?
2. Is it progressive: do you need more for the same effect?
3. Do you continue despite consequences?
4. Do you use it to escape or regulate feelings?
5. Does it bring shame or secrecy? Three or more yes answers means the loop is running, whatever the vehicle.

Common vehicles (what they do, what they give you, how to block access)

Vehicle	Mechanism	What it may be giving you	Structural blocks
Gambling (including day trading, crypto speculation, sports betting, fantasy stakes)	Unpredictable rewards and near misses	Excitement, control, escape	Self-exclusion, blocking tools, a trusted person holding finances, deleting betting apps
Sex and pornography	Endless novelty and escalation	Escape, numbing loneliness, feeling desired; avoids genuine intimacy	Content blockers with accountability reports, devices in shared spaces, an accountability partner, therapy for intimacy avoidance
Gaming	Loot boxes, progression, social belonging	Achievement, identity, escape	External timers (not in-game), uninstalling, real-world achievement goals
Shopping	The hunt, not the item	Mood regulation, identity, filling emptiness	Remove saved cards and apps, a 24 to 48 hour wait for non-essentials, unsubscribe, a cash allowance
Social media / screens	Variable social reward	Belonging, comparison, escape	See the screens chapter

Vehicle	Mechanism	What it may be giving you	Structural blocks
Food	Comfort and reward	Soothing, numbing	Regular meals, remove trigger foods, treat emotional triggers

Note on classification and evidence: compulsive sexual behaviour is listed in ICD-11 as an impulse-control disorder, not in the DSM-5 as an addiction; claims about porn-related brain changes, erectile effects and 90-day windows are debated [Emerging/mixed]. Don't use "risk capital" or "legitimate investing" as a redirect for gambling urges; active speculation can be gambling.

The four ways to break a loop

1.**See the trigger.** For a week, log each urge or episode: time, place, company, previous hour, feeling (use hungry/angry/lonely/tired/pain), and the thought just before. Patterns show up. Change the environment before the loop starts. 2.**Surf the wave.** Cravings usually peak and fade in about 15 to 30 minutes [Established for many cravings, not all]. Notice the urge, find it in the body, breathe, watch it change, set a 30-minute timer, do something else. 3.**Block access.** Rank barriers from strongest to weakest: impossible (self-excluded, no card, no private browsing), very hard (extra steps and someone else's password), moderate friction (timers you can override), willpower alone (weakest). Choose the strongest barrier you can live with. Friction is not weakness. 4.**Meet the hunger directly.** Ask: "What is this giving me? How else can I get that without a new mask?"

- oExcitement → physical challenge, competition with real stakes, adventure.
- oEscape or numbing → treat the pain source, build coping practices, rest.
- oConnection → real relationships and community.
- oAchievement or status → real projects and skills.
- oControl or safety → stabilise housing, money, routines.

Cross-audit

If you have a substance problem, check for behaviours; if you have a behavioural problem, check for substances. Ask a trusted person to review both.

Pitfalls

- "At least I'm not drinking." Swapping vehicles is not recovery.
- Relying on willpower in the 15-minute window.
- Handling shame by hiding. Shame feeds the loop; telling one safe person usually weakens it.
- Keeping access "just in case."
- Treating a financial or legal crisis as only a character problem.

When to get help

Debts, lost jobs, stolen money, conflict with partners, risky sexual behaviour, or hours lost every day. Professional help is appropriate: addiction-trained therapists, problem-gambling services, financial counselling, support groups. Treat co-occurring depression, ADHD, anxiety or trauma.

FOR CLINICIANS

For clinicians. The Kernel emphasises function over form: identify what the behaviour regulates. Naltrexone and N-acetylcysteine have limited and mixed trial evidence for gambling and compulsive sexual behaviour. Screen for suicide risk in gambling disorder.

KEY POINTS

Key points - The loop is the problem; the vehicle can change. - Five questions reveal a new mask. - Block access, surf the wave, meet the need. - Gambling-like behaviour includes speculation. - Suicide risk is real in gambling and debt crises: 988.

12. Screens, attention and the self-help trap

In this chapter. Phones and apps are built to hold attention, which competes with the dopamine, focus, sleep and calm that recovery needs. A step-by-step way to take attention back without quitting technology, plus a warning about endless recovery content.

Why it matters

Variable rewards, infinite scroll, red badges, notifications and social validation are well-known design features **[Established]**. For someone with a depleted reward system, anxiety and poor sleep, extra scrolling can worsen all three. Algorithms can also serve substance content and old using contacts. **[Kernel hypothesis]** Genetic variants “make you more vulnerable” to apps in the same way as to drugs; the Kernel’s genotype table is not tested for this.

What to do (start with the first step and add one every few days)

1.**Grayscale** the phone (an accessibility setting); remove red badges; lower brightness; use plain wallpaper. 2.**Bury the feeds.** Move social apps off the first screen, or use the website version instead of the app. Delete the highest-risk apps for you. 3.**Disarm notifications.** Keep only calls and texts from real people, calendar, and medication or recovery reminders. Mute group chats. Turn off autoplay. 4.**Build no-device**

times: the first 60 minutes after waking; the last 60 to 90 minutes before bed; meals; meetings, therapy, and exercise. 5.**Build no-device places:** bedroom (use an alarm clock; charge elsewhere), bathroom, dinner table, one sanctuary corner, and the outdoors. 6.**Batch checks:** about three or four 10 to 15 minute windows a day, with a timer. Outside windows, the phone lives in a drawer or another room. 7.**Add a daily block** of two to four hours with the phone physically out of reach, if you can manage it. 8.**Replace, don't just remove.** Morning scroll becomes a walk or stretch. Boredom scroll becomes music, a book, or an instrument. Evening scroll becomes a bath, journaling or sleep routine. Anxious scroll becomes breathing or calling a person. 9.**Use friction:** log out of accounts, delete saved passwords, set screen-time limits with a passcode someone else holds.

A 30-day outline

- **Week 1, extract:** delete top-risk apps, phone out of the bedroom, notifications off, grayscale, no phone for the first hour. Track screen time without judging it. One call to a real person daily.
- **Week 2, replace:** start a creative hobby or book, add a second walk, schedule one in- person meeting, remove apps where you spent over 30 minutes yesterday.
- **Week 3, rebuild:** hobby 15+ minutes daily, one two-hour nature outing, two in-person contacts, one concrete step toward one life area. Ask "did I do more this week, or consume more?"
- **Week 4, integrate:** write your digital boundaries, share them with someone, keep only the tools you need, set a 90-day review.

The self-help and recovery-content trap

Consuming recovery content can feel like progress while nothing changes. **[Kernel hypothesis]** Some content is made to keep you engaged, comment sections are mixed in quality, and conflicting advice can freeze people. A balanced approach: - Choose a small number of reliable sources (your treatment team, a book, a trusted group) and act on them. - Avoid comment sections when you are craving, anxious or in withdrawal. - Judge content by "did I do something because of this?" - Don't cut off peer support. Meetings, sponsors and recovery communities are different from endless scrolling. The Kernel's advice to unfollow all recovery accounts is better read as "unfollow what makes you anxious, compared or stuck."

Pitfalls

- Going cold turkey on all technology; you need your phone for banking, health and work.
- Replacing social media with another screen habit (video, news, games).
- Using the phone as your crisis tool.
- Shame about slips. Reset and continue.

When to get help

Screen use that takes over school, work or relationships despite efforts; gaming or scrolling that replaces sleep or meals; hopelessness or self-harm thoughts (988). Treatment is available for internet and gaming problems.

> KEY POINTS
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> **Key points** - Make the phone boring, then make it distant. - Four windows a day beat a hundred checks. - Replace the scroll with something real. - Keep human support; limit content consumption.

13. Aiming intensity: flow, deep work and creative work

> **In this chapter.** The all-in intensity that fed addiction can also fuel mastery. In early recovery you contain it; later you aim it. Includes the transfer risks and a litmus test.

The idea

[Kernel hypothesis] Addiction can build capacities: hyperfocus, pain tolerance, resourcefulness, all-or-nothing intensity and pattern-reading. These are not “good because of addiction”; they’re traits that were pointed at the wrong target. The task is direction, not suppression. Early recovery is about containment and basics. Later, redirection.

The myth that addiction made the art is dangerous. The intensity was there first; the substance was one outlet.

Transfer risk

Undirected intensity may land on work addiction, achievement addiction, new substances, toxic relationships or dangerous risk-taking. **Litmus test.** Can you stop when you need to? Are you neglecting recovery practices? Is it harming you or others? Would you feel shame if people saw the full extent? Any yes means redirect and talk to someone.

What to do

Flow (absorbed, time-distorted attention [Established as a psychological concept]) is more likely when: - [ ] The goal is clear. - [ ] The challenge is slightly above your skill (not boring, not overwhelming). - [ ] Feedback is immediate (music, movement, writing, building). - [ ] Distractions are removed (phone off, in another room). - [ ] You care about the activity itself.

Set up deep-work sessions: - [ ] Block 90 minutes or more, same time each day, ideally in the morning; start with 30 to 60 minutes and build. - [ ] Prepare the space the night before; use a short entry ritual (a breath, a song). - [ ] Batch email and messages into set windows (“drain the shallows”). - [ ] Guard the state once it arrives.

Creative practice: - [ ] Same time daily, even 30 minutes. - [ ] Create before you consume (no scrolling first). - [ ] Draft first, edit on another day. - [ ] Finish things. Completion is a recovery skill. - [ ] Rest, walk and sleep; breakthroughs need downtime.

Keep the guardrails: recovery practices, meetings, sleep, meals, and an accountable person who can say “you’ve crossed the line.”

Pitfalls

- Workaholism that society rewards.
- Using a project to avoid feelings.
- Perfectionism that prevents finishing.
- All-night sessions that destroy sleep.
- Using stimulants or caffeine to force focus.

When to get help

Burnout, sleeplessness, mania-like energy (little sleep needed, grandiosity, racing thoughts: needs psychiatric evaluation), or intensity that damages relationships. Therapy helps separate drive from compulsion.

> KEY POINTS
>
> **Key points** - Intensity needs a target and guardrails. - Flow needs clear goals, right-sized challenge and no interruptions. - Finish, rest, and keep recovery practices non-negotiable.

14. Medications and the pharmacy trap

> **In this chapter.** A short guide to a common trap: leaving street or illicit drugs and picking up a stack of prescriptions that creates a new dependence. This is not anti-medication. Medicines for opioid use disorder and for psychiatric conditions save lives. The point is informed, minimal, reviewed use. Other medicine topics (pain management, psychiatric medicine as a short-term “boot disk”, and others) are covered in later chapters.

Never stop alcohol, benzodiazepines, Z-drugs, GHB, or high-dose gabapentinoids suddenly. Withdrawal can cause seizures, psychosis and death. Opioid withdrawal is rarely fatal in healthy adults but carries high relapse and overdose risk, because tolerance falls fast. Do not change any prescribed medicine on your own. Taper decisions belong to a prescriber.

Which medicines carry risk

Class	Risk
Benzodiazepines (alprazolam, diazepam, clonazepam, lorazepam)	Physical dependence can develop within weeks of daily use; withdrawal is medically dangerous
Opioids (oxycodone, hydrocodone, morphine, tramadol, others)	Dependence and overdose; cross-addiction with street opioids; medically supervised use may be right, such as buprenorphine or methadone for OUD
Z-drugs (zolpidem, eszopiclone, zaleplon)	Dependence and rebound insomnia
SSRIs / SNRIs	Not addictive but stopping suddenly can cause discontinuation symptoms; some (venlafaxine, paroxetine, duloxetine) are harder to stop
Gabapentinoids (gabapentin, pregabalin)	Dependence and withdrawal are increasingly recognised, especially at high doses; “bridge” use can trade one dependence for another, a specialist decision

Mixing sedatives (alcohol, benzodiazepines, opioids, gabapentinoids, sleep aids) multiplies the risk of dangerous breathing suppression. Combinations of antidepressants, stimulants, some supplements (such as 5-HTP, St John’s wort) and some street drugs can cause serotonin syndrome (agitation, sweating, fever, tremor, fast heartbeat). Seek emergency care. Always check new combinations with a pharmacist or prescriber.

An honest inventory (answer privately, then share with a clinician)

- How many brain-active medicines am I on (mood, sleep, anxiety, pain, attention)?
- Did they accumulate after I entered recovery?
- Do I feel I need them to function? Are doses creeping up?
- Do I panic at the thought of running out?
- Am I hiding the full list from my sponsor, therapist or doctor?
- Do I feel relief just from filling the prescription?

Red flags: three or more brain-active medicines at once, a benzodiazepine taken daily for months, opioid prescriptions without severe acute pain or formal treatment, escalating doses, doctor shopping, or relief at the pharmacy counter.

What to do

1.**Bring one complete list** of every medicine and supplement to every prescriber and pharmacist. 2.**Name your history** of addiction when prescribers consider controlled drugs, and ask about non-addictive options. 3.**Ask the review questions:** Is this still needed? What is the plan to stop or reduce it? What are the alternatives? 4.**Use one pharmacy and one prescriber for controlled drugs** where you can. 5.**Make taper decisions together.** Longer use generally means slower reduction, and the pace is set by symptoms, not by the calendar. Dose changes, switching to longer-acting forms, liquid formulations and supportive medicines are prescriber's choices. The exact approach, including whether to cross-taper a short-acting benzodiazepine to a longer- acting one, is the prescriber's decision. 6.**Keep naloxone** at home if you take opioids or live with someone who does. 7.**Don't self-adjust supplements to "fix" medicine problems.** 8.**Tell someone** if you are using medicines for a purpose they weren't prescribed.

Pitfalls

- Stopping a medicine suddenly because you read it is "the same as a drug".
- Refusing necessary medicines such as buprenorphine, methadone, or naltrexone because "it's still drugs."
- Accumulating prescriptions from several clinicians who don't talk to each other.
- Hiding medicine use from your recovery community.
- Treating withdrawal symptoms with supplements instead of calling the prescriber.

When to get help

Withdrawal symptoms (tremor, sweats, seizure, hallucinations, severe anxiety) mean emergency care. Call the prescriber if you miss doses, run low, or are tempted to take more. Call 911 for overdose signs (slow or stopped breathing, blue lips, unresponsive): give naloxone if opioids may be involved.

FOR CLINICIANS

For clinicians. Patient reports may be shaped by past experiences of not being believed; collaborative, data-informed prescribing reduces strategic reporting. Follow current guidelines on benzodiazepine tapering (individualised, gradual pace; cross- tapering as an option rather than a rule). Gabapentinoid bridges carry misuse and dependence risk.

KEY POINTS

Key points - Medicines can heal or become the new cage. - Never stop sedatives suddenly; supervised taper only. - Keep one honest, complete medicine list. - Medicines for opioid use disorder are not a failure.

15. Optional extras: supplements, peptides, devices

> **In this chapter.** A brief, honest map of "advanced" options. They are optional, come after the basics, and many have limited evidence. Nothing here is a reason to delay treatment, sleep, food or movement.

Safety. Dose all supplements with a clinician or pharmacist. Nothing unverified is safe: sourcing matters. Peptides are physician-only: see below.

Order of priority

1. Sleep, food, water, movement, light, daily structure, treatment and peer support (earlier chapters).
2. Basic supplements only where a clinician finds a need.
3. Optional extras below.

Supplements and compounds the Kernel mentions

Item	Claim	Evidence label	Cautions
NAD+ (IV, nasal, oral precursors such as NR or NMN)	Cellular energy, may ease withdrawal or cravings	[Emerging/limited]; IV "addiction treatments" are unproven	Costly; use medically supervised clinics; infusions can cause flushing and discomfort
Lion's mane, phosphatidylserine, citicoline, alpha-GPC, uridine, PQQ, Item	Nerve growth, memory, repair Claim	[Emerging] Evidence label	Interactions possible; limited trials Cautions
sulforaphane			
Agmatine, DLPA (a dopamine and endorphin precursor)	Opioid and pain support	[Kernel hypothesis]	DLPA and tyrosine-type products can interact with MAO inhibitors and raise blood pressure; avoid with active psychosis, mania or bipolar disorder unless a psychiatrist agrees
NAC, taurine	Used in some alcohol or cannabis recovery protocols	[Emerging]; NAC for cannabis use disorder acetaminophen is promising but uncertain	Not a treatment for overdose: call Poison Control

Item	Claim	Evidence label	Cautions
Omega-3, vitamin D, magnesium	Brain health, mood	[Emerging to Established]	See nutrition and water chapters

Peptides (BPC-157, Semax, Selank, Epitalon and similar)

[Emerging, mostly animal or small studies] These are research compounds, not approved for addiction recovery, with variable purity and unknown long-term effects. Treat them as **physician-only**; do not buy from unregulated sellers; do not combine with other sedating or serotonergic agents without prescriber input. Selank has been discussed for benzodiazepine withdrawal, but supervised medical care is the evidence-based path.

Devices and therapies

Option	What it is	Evidence
TMS (transcranial magnetic stimulation)	Magnetic pulses to treat depression	**[Established]** for treatment-resistant depression; **[Emerging]** for addiction
Neurofeedback	EEG training	[Emerging/mixed]
tDCS, red-light therapy	Low electric current; near-infrared light	[Emerging/limited]
Float tanks	Sensory reduction for relaxation	**[Emerging]** for stress and anxiety; can trigger distress in trauma or psychosis
Cold exposure (cold showers) Alertness, mood		**[Emerging]**; risky with heart conditions; start with short, mild exposure
Sauna / heat Option	Relaxation, cardiovascular What it is effects	[Emerging to Established for Evidence general wellbeing]; avoid when dehydrated, pregnant, or with heart conditions; never combine with alcohol or sedatives
What to do		

- ☐ Ask whether an option could interact with your medicines or conditions.
- ☐ Add one thing at a time and track results.
- ☐ Set a spending ceiling.
- ☐ Stop an option that makes you worse and tell your clinician.

Pitfalls

- Chasing “biohacks” while neglecting sleep, meals and meetings.
- Spending money you need for rent or treatment.
- Self-sourcing peptides, injectables or “research chemicals.”
- Stacking many supplements at once.

When to get help

Any new symptom after starting a product (palpitations, agitation, rash, jaundice, low mood, insomnia, sweating, tremor): stop and call your clinician or Poison Control (1-800-222-1222). Emergency signs: 911.

> KEY POINTS
>
> **Key points** - Optional comes after essential. - Evidence is thin for most of this list. - Peptides are physician-only research compounds. - Free tools (sleep, light, movement, people) beat most gadgets.

PART B. MEDICINE, RELATIONSHIPS AND INSTITUTIONS

Content is US-centred (911, 988, Poison Control, SAMHSA). Check local equivalents elsewhere. Crisis resources: 911 for emergencies; 988 (call or text); Poison Control 1-800-222-1222; SAMHSA 1-800-662-4357; Crisis Text Line: text HOME to 741741. For the shared rules (never stop alcohol, benzodiazepines, Z-drugs, GHB or high-dose gabapentinoids suddenly; a break is not a reset; nothing unverified is safe), see the Handbook chapter "The 12 Safety Rules".

Contents 1. Medications in recovery: avoiding a swap, planning an exit 2. When treatment causes harm: antipsychotic movement disorders 3. Pain and recovery 4. What was the substance doing for you? 5. GLP-1 medications and craving 6. Finding a support path that fits (and mixing paths) 7. Auditing your social world 8. Isolation and the withdrawal reflex 9. Sex and intimacy in recovery 10. When your partner is using or betrays you 11. Your family system

12. Withdrawal at home while parenting 13. Arrest, custody and release 14. Living near people who are not ready 15. Mapping triggers and rerouting cravings 16. Learning from a lapse

1. Medications in Recovery: Avoiding a Swap, Planning an Exit

> **In this chapter.** Prescribed drugs can be life-saving or can quietly become a second dependence. The Kernel's position is "not anti-medication, anti-default": know why you take each drug, how long, and what the plan is. Never stop on your own.

Purpose

Keep medication in its proper role: a tool with a reason, a review date and an exit plan where an exit makes sense.

Two opposite mistakes

- **The swap.** Leaving an illegal drug and picking up a prescribed one (benzodiazepines, sleep drugs, opioids, sometimes gabapentinoids or stimulants), or accumulating several brain-active medications while calling it sobriety. Dependence is dependence, whoever supplies it.
- **The refusal.** Refusing medication on principle. Buprenorphine (including Brixadi weekly or monthly injections; the implant has been discontinued) and methadone save lives. Someone stable on them, connected and rebuilding a life is in recovery. People with schizophrenia, bipolar disorder or severe treatment-resistant depression may need long-term medication; stopping it can bring psychosis, hospitalization or suicide.

Higher-risk medications to review with a prescriber

Class	Why it needs care
Benzodiazepines and Z-drugs	Dependence in weeks; seizure risk if stopped suddenly
Opioids (outside formal treatment)	Relapse and overdose risk
Sleep medications	Rebound insomnia, dependence

Class	Why it needs care
Some antidepressants	Discontinuation symptoms if stopped abruptly
Gabapentinoids	Withdrawal increasingly recognized, especially at high doses
Stimulants, antipsychotics, mood stabilizers	Need monitoring and a plan; never stop abruptly

What to do (checklist)

- ☐ Make a list of every medication, who prescribes it, how long you have taken it and why.
- ☐ Tell every prescriber your addiction history. A prescriber who does not know cannot prescribe safely.
- ☐ Ask: Is this meant to be temporary? What is the review date? What would stopping look like, and who would supervise? Are there non-habit-forming options? What interactions does it have with my other drugs?
- ☐ Ask for a pharmacogenomic or other testing only if your clinician thinks it will change decisions. Never delay a needed medication waiting for results.
- ☐ If concerns are dismissed, get a second opinion from an addiction medicine specialist or a psychiatrist with addiction expertise.
- ☐ If a prescriber hands out controlled drugs casually despite your history, find a more careful one.
- ☐ Watch for dependence signs: raising the dose yourself, panic at the thought of running out, using it differently than prescribed.

The “boot disk” idea **[Kernel hypothesis]**

The Kernel pictures medication as a boot disk: it stabilizes a crisis and buys time while the real causes are found and treated, then is reviewed rather than left in place by default. Four phases:

1. **Stabilize.** Accept appropriate medication; ask about the plan from the start. 2. **Audit.** While stable, look for what drove the problem: sleep, nutrition, thyroid, vitamin status, other substances, stress, trauma, and (optionally) genetic information. 3. **Build the support stack.** Sleep, exercise, light, therapy, skills and community, so you are less dependent on the drug. 4. **Verified exit, if appropriate.** Only when stable for months, with your prescriber, slowly, with the option to pause. How fast and how to proceed is the prescriber’s decision.

Principles that hold for any psychiatric drug: no sudden stops; go slowly; pause if destabilized rather than abort; distinguish withdrawal (peaks and fades) from relapse (persists and worsens); have a rescue plan;

build support before tapering. Benzodiazepine reductions are the highest-risk and need specialist supervision; the method (including any switch to a longer-acting drug) is a prescriber's choice.

Claims to hold loosely

- That approval trials of 6 to 12 weeks do not tell us about years of use is a fair point **[Established]**. Statements about genotype deciding which drug "conflicts" with a person (for example COMT and stimulants) are **[Kernel hypothesis]**; not a basis for changing medication on your own.
- Supplement "support stacks" during a taper: **[Emerging]** at best; dose with your clinician or pharmacist, and check interactions.

Pitfalls

- Tapering on your own because a book said so.
- Treating withdrawal symptoms as proof you "needed" the drug, or as proof you are failing.
- Stopping psychiatric medication to achieve "true sobriety."
- Hiding a prescription from sponsor or treatment team.

When to get help

Seizure, confusion, hallucinations or suicidal thoughts during any medication change: 911 or 988. Otherwise call your prescriber the same day.

> **KEY POINTS**
>
> - Neither swapping nor refusing is recovery.
> - Every medication needs a reason, a review date and a plan.
> - Tell prescribers your history.
> - Reductions are supervised, slow and pausable.
> - Medication for opioid use disorder and severe mental illness is part of recovery.

2. When Treatment Causes Harm: Antipsychotic Movement Disorders

> **In this chapter.** Antipsychotics can be essential, and they can also cause movement disorders that are sometimes permanent. This chapter is about informed consent and what to do, not about avoiding treatment.

Why it matters

Antipsychotics block dopamine receptors. Dopamine also runs movement, so movement side effects are expected pharmacology, not rare accidents **[Established]**.

Problem	What it looks like
Parkinson-like effects	Stiffness, tremor, slowed movement; usually reversible
Akathisia	Intense inner restlessness; can be mistaken for anxiety; linked with suicidal thoughts
Tardive dyskinesia	Repetitive face, tongue or limb movements after long use; may persist
Tremor	Can be induced or worsened; may persist
Neuroleptic malignant syndrome	Fever, rigidity, confusion: emergency, 911

Substance-induced psychosis

Stimulant or cannabis psychosis can look identical to a primary psychotic illness at first. Often it fades over days to weeks without ongoing treatment, but in the emergency room there is rarely time to tell. Ask later: “Is ongoing medication still needed? Who will review it?”

What to do

- ☐ Ask before starting: movement risks, monitoring plan, how long, who reviews.
- ☐ If you take an antipsychotic, ask for regular movement checks.
- ☐ Never stop abruptly. Stopping can bring rebound psychosis or worsen movement symptoms. Changes happen with a prescriber, ideally one skilled in psychiatric medication management.
- ☐ If new movements, restlessness or stiffness appear, ask directly whether they could be drug-induced. Do not accept “it just happens” without assessment.
- ☐ Psychosis symptoms (hearing voices, fixed false beliefs, severe confusion) need psychiatric care. Do not self-manage with supplements; do not take dopamine-raising supplements during psychosis.
- ☐ Sexual or hormonal side effects: see Chapter 9.

Living with an injury caused by treatment

Several things can be true together: the treatment may have been necessary; clinicians may have acted in good faith; the consent process may still have been inadequate; your anger and grief are legitimate. Distrust of the system after this is not pathology. Pick clinicians who answer questions plainly.

FOR CLINICIANS

Document informed consent about movement disorders; screen regularly; distinguish akathisia from anxiety before escalating doses; consider substance-induced psychosis in the differential and reassess need for long-term treatment. Whether and how to reduce a long-term antipsychotic is a specialist decision.

KEY POINTS

- Essential drug, real risks: both are true.
- Ask about movement effects before and during treatment.
- Never stop suddenly; no supplement fixes psychosis.

3. Pain and Recovery

> **In this chapter.** Injury, surgery or chronic pain is one of the highest-risk moments in recovery. You do not have to choose between suffering and relapse. Plan before you need to.

Five ways pain threatens recovery

1. Opioid exposure activates reward directly (relapse, or cross-addiction).
2. Suffering as a trigger: desperation worsens judgment.
3. Sleep destruction.
4. Mood collapse.
5. Isolation.

Pain has two parts

The raw signal, and the layer of fear, catastrophizing and tension on top. Stress and anxiety amplify pain signals; calming the second layer measurably reduces total suffering. This is not “it’s all in your head.”

Least risky effective option first

Step 1, no drug or low risk: heat or cold, movement and physical therapy, sleep repair, anti- inflammatory eating, mindfulness-based stress reduction, acceptance and commitment therapy, acupuncture, massage, therapy for trauma. Treat anything that fed your pain (see Chapter 4 on old injuries).

Step 2, non-opioid medicines (discuss with a prescriber): - NSAIDs: good for inflammatory pain, no addiction risk, but stomach, kidney and heart cautions. - Acetaminophen: no addiction risk; liver risk at high doses or with alcohol. **If you may have taken too much acetaminophen, call Poison Control (1-800-222-1222) or 911 immediately, even before symptoms appear.** - Topicals (lidocaine, capsaicin), TENS. - Some antidepressants and anti-seizure medicines for nerve pain (check misuse risk, especially gabapentinoids). - Muscle relaxants: sedating; watch for misuse.

Step 3, opioids only when truly necessary (surgery, severe trauma, cancer, end-of-life, or after other options are exhausted). Safeguards: 1. **Full disclosure** to every provider, including your recovery status. 2. **Shortest course**, with a stop plan made before the first dose. 3. **External control:** someone else holds and dispenses the medication. 4. **Accountability:** sponsor or support person knows; extra check-ins and support meetings. 5. **Exit plan before entry.** 6. **Know the warning signs:** taking more than prescribed, running out early, seeking other sources, hiding use, focus shifting from relief to the high. If any appear, call your prescriber and support person that day. 7. Ask your addiction and pain teams to talk to each other. If you are on buprenorphine or methadone, do not stop it on your own before surgery; tell the surgical and anesthesia team. If you are on naltrexone, surgeons must know, and pain control needs specialist planning.

Under-treatment is also a danger

Undertreated pain creates desperation that looks like drug-seeking and can push people to the street supply. Ask for a plan that treats pain. Being in recovery does not mean accepting constant suffering.

Genetics and pain medicine [Emerging / Kernel hypothesis]

Enzyme variants (for example CYP2D6 for codeine and tramadol, CYP2C9 for NSAIDs) can change how drugs work. The codeine warning is well established **[Established]**: some people get no relief and some convert it to morphine dangerously fast. The Kernel's claim that COMT variants predict euphoria or "addiction from a standard dose" is a **[Kernel hypothesis]**. Do not choose your own dose from a genetic report. Ask a pharmacist or clinician whether pharmacogenomic testing would change your care, and do not delay needed pain treatment waiting for results.

Supplements

Anti-inflammatory diet and omega-3, magnesium, and similar supports are **[Emerging]**. Dose with your clinician or pharmacist, and check interactions. Do not take amino-acid or opioid- peptide supplements (such as DLPA) on your own initiative alongside other medicines.

Pitfalls

- Hiding your history from the surgeon.
- Keeping the bottle yourself.
- "Just this one refill."
- Treating the signal but not the amplifier (stress, sleep, isolation).

When to get help

Pain that is out of control, thoughts of using, or suicidal thoughts: your prescriber the same day; 988 any time. Overdose signs (cannot wake, slow or no breathing): 911 and naloxone.

KEY POINTS

- Plan for pain before it happens; tell every clinician.
- Treat both the signal and the amplifier.
- Opioids only with safeguards and an exit plan.
- Call Poison Control early for suspected acetaminophen overdose.

4. What Was the Substance Doing for You?

> **In this chapter.** The Kernel's "substance masking" idea: a substance is often an imperfect answer to a real problem. Finding the problem helps keep recovery stable. This is a hypothesis- generating exercise, not a diagnosis.

The idea

Substance choice often reflects what the person was trying to manage. A substance is not just a moral failure; it may be a solution that costs too much. Hiding a problem does not repair it, and the underlying condition usually continues, or worsens, while use continues.

Substance family	Commonly being managed [Kernel hypothesis]
Opioids	Physical pain from unhealed injury, or emotional pain held in the body
Stimulants	Exhaustion, low motivation, sleep debt, malnutrition, ADHD-like focus problems
Alcohol and benzodiazepines	Anxiety, panic, hypervigilance, trauma, sleeplessness
Cannabis, sedatives	Sensory overload, racing thoughts, inflammation-linked distress

This is a pattern, not a rule. Individual variation is large.

Audit the physical conditions (do this with a clinician)

- **Old injuries:** fractures, sprains, surgeries, repetitive strain that were "managed" instead of treated. Ask for a proper assessment and physical therapy.
- **Senses:** uncorrected vision, hearing loss, tinnitus, and light or sound sensitivity create constant strain.
- **Sleep:** sleep apnea, insomnia, circadian disruption. Sedatives produce unconsciousness, not restorative sleep.

- **Nutrition and metabolism:** blood sugar swings, thyroid, anemia, vitamin D and B12 status, dehydration.
- **Mental health:** depression, anxiety, ADHD, trauma, bipolar disorder. Treat them directly.

Genes and testing [Kernel hypothesis / Emerging]

The Kernel links COMT variants (dopamine clearance speed) and MTHFR variants (folate handling) to substance preference and mood. This is plausible but not proven; it is not a way to predict who will become addicted, and it should never be presented as fact about personality. Consumer genetic data and third-party interpretation tools vary in quality. A normal or abnormal result does not change the core steps. Never delay starting treatment to wait for results.

Supplements

Support for depleted systems in early recovery (amino acid precursors, magnesium, B vitamins, glutathione precursors, electrolytes) is **[Emerging]** at best. Dose with your clinician or pharmacist. Do not combine serotonergic supplements (such as 5-HTP or tryptophan) with antidepressants or MAOIs, because of serotonin syndrome risk. 5-HTP only on physician advice, never with serotonergic drugs. Do not use dopamine-raising supplements if you have any psychosis history or symptoms.

Reframing

Move from “What is wrong with me?” to “What was my body trying to manage, and what else can manage it?” Recovery for many people runs through the underlying condition, not around it. Sobriety tends to follow wellbeing more reliably than willpower alone.

Harm reduction while repair is underway

Staying alive and functional is a legitimate goal even before abstinence. Carry naloxone if opioids may be involved; remember naloxone does not reverse xylazine or medetomidine sedation, so still call 911 and give rescue breaths. Fentanyl and nitazenes can be in any supply; test strips do not detect everything. Nothing unverified is safe.

> **KEY POINTS**
>
> - Ask what the substance was managing; treat that directly.
> - Audit injuries, senses, sleep, nutrition, mental health.

- Genetic links are hypotheses; test results never justify delay.
- Supplements: clinician-guided, interaction-checked.

5. GLP-1 Medications and Craving

In this chapter. Semaglutide and tirzepatide, approved for diabetes and weight, may reduce craving in some people. The evidence is early. They are prescription, off-label for addiction, and no substitute for recovery work.

Status [Emerging]

- Reports from 2023 onward noticed people spontaneously drinking less, smoking less and bingeing less on these medicines. GLP-1 receptors exist in reward and impulse- control regions.
- Observational and early trial data suggest reduced drinking in some people; opioid findings are preliminary and not a replacement for buprenorphine or methadone; other agents are in trials. Reported percentages vary by study and should be treated as early, not settled. (Check current data: this field changes fast.)
- Not approved for addiction. Optimal use for addiction is not established. Long-term effects are unknown.

Medical points (prescriber only)

- Serious risks include GI distress, pancreatitis, gallbladder disease, kidney injury, retinopathy complications in diabetes, allergic reactions; thyroid C-cell tumor boxed warning.
- Do not use with personal or family history of medullary thyroid cancer, MEN 2, pancreatitis, severe gastroparesis, pregnancy or planned pregnancy, or breastfeeding.
- Extra caution: active eating disorder, severe depression or suicidal thoughts, kidney disease.
- Never obtain these medications from unverified sources; counterfeit or compounded products are a real risk.

Who may benefit [Kernel hypothesis]

Alcohol use disorder with metabolic indications, binge eating or food addiction, strong craving despite therapy and standard medication. A prescriber decides.

What the medication does not do

It does not build coping, repair relationships, supply purpose or treat trauma. Keep every other layer: therapy, support, medication for addiction where indicated, sleep, nutrition, community.

The overconfidence trap

Around months three to six, craving can fade enough that people think they no longer need support. That is the drug's effect, not a cure. If craving returns when the medication stops, that is pharmacology, not moral failure; plan the reassessment with your prescriber in advance.

KEY POINTS

- Promising, early, off-label, prescriber-supervised.
- Not for everyone; screen for contraindications.
- Keep the other layers of recovery.
- Watch for overconfidence.

6. Finding a Support Path That Fits (and Mixing Paths)

> **In this chapter.** Twelve-step meetings help many people, and they are not the only route. Pick the container that fits you, and combine pieces if needed. Whatever you choose, do not go without human support.

Options at a glance

Path	What it offers	Good fit if
12-step (AA, NA)	Steps, sponsor, fellowship, spiritual frame, free and everywhere	You like structure, community, a spiritual or meaning-focused approach
SMART Recovery	Cognitive-behavioral tools, motivation, urge coping; secular	You want skills and self-direction
Recovery Dharma	Buddhist-informed, meditation-centred	You want contemplative practice without a higher power
LifeRing	Secular, peer, “Sober Self” focus	You want no ideology
Secular AA/NA, Women for Sobriety, faith-based groups	Variants with different language or community	You want the structure with different framing
Therapy, coaching, online communities, medication clinics	Professional or flexible support	Your needs are clinical, or meetings are hard to attend
Moderation programs	Reduced-use goals for some alcohol users	Mild problems; not for severe dependence

Choosing: five questions

1. Do I want spiritual language, or none?
2. Do I want a fixed program of steps, or flexible tools?

3. Do I want a group, one-to-one, or mostly online?
4. Do I want abstinence, or reduced use (only for mild problems, with a clinician)?
5. What worked, or failed, before? Try two or three options for a month each before judging.

Be honest about the evidence

Reviews find 12-step facilitation helps abstinence about as well as or better than other treatments for many people, particularly where people attend regularly. Rates of long-term attendance are low, and numbers quoted in the source text for dropout and “no better than nothing” are disputed or oversimplified; treat them with caution. Meetings are peer-led, so content varies. Watch for common myths: - “Medication isn’t real sobriety.” False. Medication for opioid and alcohol use disorder is evidence-based. Do not let anyone talk you off it. - “You can’t recover without the steps.” Multiple pathways work. - “Once an addict…” as a life sentence. You choose your own identity language.

What meetings give you, and where else to get it

Function	Other sources
Connection	Clubs, classes, volunteering, friends
Structure	Standing weekly commitments, work, gym
Accountability	Therapist, coach, check-in partner
Hope and models	Memoirs, podcasts, online groups
Ritual	Morning and evening routines, faith, nature

Matching activities to your state

- High arousal (anxiety, agitation, alcohol or benzodiazepine withdrawal): quiet, gentle movement, low stimulation. Sit-down group meetings may be too much early on. **Alcohol or benzodiazepine withdrawal needs medical supervision first.**
- Low arousal (stimulant crash, depression): gradual activating movement, daylight, small goals.
- Opioid withdrawal recovery: gentle rhythmic movement and warmth, with medical support.
- Learn to feel again: tolerate discomfort in small steps, with support, rather than only talking about it.

A minimum weekly structure (example)

- Daily: consistent wake time and light, 20 or more minutes of movement, time outdoors, one human contact (not social media), a wind-down routine.
- Weekly: two or three scheduled social activities, one or two skill sessions (instrument, craft, class), one longer time in nature, one check-in with a supporter or clinician.

Pitfalls

- Dogmatism in any direction (“my path is the only one”).
- Quitting meetings and replacing them with nothing.
- Believing an unqualified claim about medication.

When to get help

Cravings you cannot manage, thoughts of self-harm: 988, SAMHSA 1-800-662-4357.

KEY POINTS

- Fit matters. Try several; mix pieces.
- Keep connection, structure and accountability whatever you pick.
- Medication is compatible with every path.

7. Auditing Your Social World

> **In this chapter.** You tend to take on the habits and expectations of the people you spend time with. Change your circle deliberately, calmly and without drama, and always add people as you reduce others.

Why it matters

Exposure to use, to people talking about use, even to media about it, can trigger craving. Stress in people around you raises your own. This is normal biology (observing actions can activate related brain responses). It is not weakness.

Step 1: The honest inventory

List the five to ten people you actually spend most time with. For each: - Do they know about my recovery? Do they support it in words and actions? - Do they use around me? - How do I feel after time with them: energized or drained? - Do they respect boundaries? Would they help in a crisis? - Do they pull me toward or away from my goals? - Would my success threaten them?

Step 2: Sort into circles

Circle	Who	Action
Crisis contacts (3 to 5)	Know everything, reliable at 3 a.m., committed	Protect and deepen
Regular support (5 to 10)	Weekly contact, supportive	Invest
Neutral acquaintances	Neither help nor harm	Keep light; avoid risky settings
Draining or risky	Use around you, mock recovery, pressure you	Reduce or end

Step 3: Reduce without drama

Big confrontations create stress, and stress is a trigger. For draining relationships, use the quiet fade: 1. Stop initiating contact. 2. Slow your replies; keep them short. 3. Suggest only low-risk settings and short visits. 4. Have scripts ready ("I'm driving." "Early morning." "Not tonight." "Doctor's orders.").

Hard boundary for anyone who pressures you to use, mocks recovery, is abusive or is physically or psychologically dangerous: a short, calm message ("I need to focus on some things right now and I won't be available. I wish you well."), then block. Where there is abuse or danger, put safety first and get advocacy support.

Step 4: Build, do not just cut

- Recovery communities: arrive early, stay late; connections form in the margins.
- Growth-oriented people in any field, sober social events, classes, volunteering.
- Say yes to invitations from nourishing people. Initiate more. Be reliable.
- Share a little at a time and test small trust before big trust.

Family: the special case

Limit exposure: shorter visits, public places, a sober ally present, topic limits ("I'm not discussing that" is a complete sentence), planned exits, recovery time afterward. More in Chapter 11.

Use the agency frame

Avoid "they are toxic and make me use." Use "I am choosing how I spend my time." The outcome is the same; the first leaves you powerless and resentful, the second leaves you in charge.

KEY POINTS

- Audit, sort, reduce quietly, then build.
- Never reduce without adding.
- Hard stop for dangerous people.
- Agency, not blame.

8. Isolation and the Withdrawal Reflex

> **In this chapter.** When you hurt, you will want to withdraw, and withdrawal is one of the most reliable routes to relapse. Connection has to be scheduled while you are well because you will not feel like it when you need it. This also covers what the Kernel calls the "isolation algorithm" (how use itself shrank your life).

How the loop runs

Feel bad (shame, depression, anxiety, rejection) → cancel plans, ignore calls → alone with unchecked thoughts → distortions grow, shame ferments, no one witnesses → feel worse → withdraw further. Using also needs privacy; isolation provides it. Isolation is among the strongest predictors of relapse.

Typical lies the reflex tells: "I'll reach out when I feel better" (reaching out is what helps); "I don't want to bother anyone" (people who care want to hear); "No one would understand" (others in recovery do; others can still witness); "I just need time" (a little solitude is fine; a lot is dangerous, and you are not the best judge of which); "I'll handle it alone."

How use shrank your life **[Kernel hypothesis]**

Over time drugs can become the efficient route to reward: people become "overhead," social skills go unused, and ordinary pleasures feel weak because the reward system has recalibrated. Withdrawal also drains the energy social contact needs. This is not character. It is recoverable, in this order: 1. **Repair the basics first:** sleep, food, movement, medical care. Do not force a party on a depleted system. 2. **Climb an exposure ladder** (see below), no skipping rungs. 3. **Expect flat pleasure at first** and keep going; it improves.

Three levels of connection

Level	What	Examples
1. Proximity	Be near people, no interaction	Café, library, park, gym for 30 to 60 minutes

Level	What	Examples
2. Parallel	Do something alongside others	Meeting (you need not speak), class, volunteer shift, group fitness, place of worship
3. Interactive	Real exchange	A text, a five-minute call, coffee, saying “I’m struggling”

Ladder for re-entry after long isolation: proximity, then brief acknowledgment (nod, hello), then small talk, then planned short meetings, then deeper conversation.

Pre-commit while stable

- A standing weekly commitment (same place, same time), treated like medication.
- A daily check-in text to someone who will notice if it stops.
- A named person you tell: “The spiral is running.”

Crisis rules (decided in advance)

- Home 24 hours? **Leave.** Anywhere.
- Cancelling plans? **Substitute** one within 24 hours.
- Feeling the reflex? **Tell someone,** even one line.
- Ignoring contact? **Answer one.**
- Nothing else works? **Go to a café** among strangers.

Repairing old friendships

Audit which ones are recoverable, neglected, or incompatible with recovery. Reach out simply (“I’ve been working on myself and thinking of you. Coffee?”). Keep first meetings short and low- key, listen more than talk, do not unload your whole story.

When to get help

If isolation comes with hopelessness or thoughts of suicide: 988 (call or text), or text HOME to 741741. Do not wait for it to pass.

KEY POINTS

- Withdrawal feels protective and is not.
- Connect on schedule, not on mood.
- Start at the lowest level that you can do today.
- One text counts.

9. Sex and Intimacy in Recovery

> **In this chapter.** Substances change desire and sexual function. Low desire early on is common and usually temporary. Sober intimacy is often something you learn, not something you recover. Medications also affect sex, and can often be addressed.

What substances commonly did

- **Stimulants:** intense sex tied to the drug; flat desire and difficulty without it.
- **Opioids:** low libido, hormonal changes.
- **Alcohol:** intimacy fused with intoxication, performance anxiety when sober.
- **Pornography:** arousal tuned to screens and novelty rather than a real partner.
- Many people learned intimacy only while impaired, so the first sober experience is a first.

The flatline

Little or no desire in early recovery is common, typically over one to several months, sometimes longer. It reflects recalibration, not permanent damage. - Do not panic, do not test yourself (porn “checks”), do not force sex to prove anything. - Tend the foundation: sleep, food, movement, stress, therapy. - If it persists beyond about six months, or you have other symptoms, see a physician (hormone and general health assessment). Treat underlying causes.

Rebuilding intimacy

1.**Reconnect with your own body** through attentive, non-sexual sensation (warm shower, stretching, movement). 2.**Non-sexual touch** with a trusted person first: holding hands, hugging, cuddling. 3.**Sensate focus** (a structured sex-therapy exercise of graduated touch without performance goals), best learned with a sex therapist. 4.**Talk honestly** about fears and boundaries. Pace, consent and stopping at any time matter. 5.**If you dissociate:** ground (feel your feet, name things in the room), slow down, return.

6. Expect imperfection. Awkwardness is part of learning.

Pornography

If it was a big part of use: a period of no porn (and no fantasy-driven arousal) allows the arousal system to recalibrate; shift gradually toward real-person contact. Porn-related erection difficulty often improves with abstinence [Emerging, with many case reports]. A sex therapist or a certified sex-addiction specialist can help. If sexual urges or behavior involve children or non- consenting people, or cause harm to others, get specialized professional help now: Stop It Now helpline 1-888-773-8368 (confidential, US), and consider legal advice.

Medication effects (tell your prescriber)

- **Antipsychotics:** may raise prolactin and lower sex hormones; sexual side effects are common. Ask about a prolactin blood test and whether a different drug or adjustment is possible.
- **SSRIs:** can reduce desire, delay orgasm or reduce sensation. Persistent symptoms after stopping (PSSD) are recognized by some regulators but poorly understood **[Emerging]**.
- Do not stop medication to fix this. Prescribers can adjust, switch or add treatment. Doses of any supplement for hormones: only with a clinician after blood work. Do not self-treat with dopamine-raising or hormone supplements.
- Resistance training, sleep and stress reduction support hormones [Established general health].

Dating and disclosure

- Re-enter gradually: low-stakes places, then shared activities, then dates.
- Stages of disclosure: early on, “I don’t drink” or “I live a healthy lifestyle” is enough; share health or recovery history as trust grows, and before it becomes physical or serious.
- Reject “I’m too broken to be loved.” Survival, self-awareness and growth are strengths.

Beware replacing one dependence with another

Constant therapy, meetings or monitoring can become a new container you cannot leave. Use support as a safety net below you, not a cage around you.

When to get help

Persistent loss of desire beyond six months, medication side effects, pain with sex, trauma reactions during intimacy: physician, sex therapist or trauma therapist. 988 if you feel hopeless.

KEY POINTS

- Flatline is common and usually temporary.
- Start with non-sexual touch and honesty.
- Medication-related sexual problems are real and often fixable.
- Never test or force; get help if it persists.

10. When Your Partner Is Using or Betrays You

In this chapter. A partner's use threatens your home, your trust and your recovery in ways a friend's use does not. You are responsible for your system, not theirs.

Four extra threats

1.**Home contamination:** paraphernalia, residue, smell in your safe place. 2.**Close-range cue exposure:** seeing use up close triggers craving. 3.**Betrayal and chaos:** lies, money, crises, unpredictability. 4.**Dependency:** love, finances, housing and children make leaving hard.

First steps

Safety first. If there is violence or threat, get safety planning and advocacy (National Domestic Violence Hotline 1-800-799-7233 in the US). Your recovery does not require staying in danger.

- ☐ Tell at least one person: "I'm in a difficult situation at home that is stressful for my recovery. I need support." That is enough; you need not tell the whole story.
- ☐ Remove or contain substances in shared space where you can, and ask that none be used around you.
- ☐ Keep your own recovery routines and appointments.
- ☐ Naloxone at home if there is opioid use. Remember it does not reverse xylazine or medetomidine, so call 911 regardless.

The uptime check (instead of "back to zero")

Rate yourself after an upsetting event, again at 48 hours and 7 days:

Level	What it looks like	Action
Green	Shaken, stable, no cravings	Keep routines
Yellow	Poor sleep, some craving, reduced function	Contact support, add protective habits
Orange	Cravings pressing, drifting, isolating	Immediate support contact, deliberate steps
Red	Self-harm thoughts, use happened or imminent	Get help now: 988, your clinician, or 911

Watch the trend. A slow slide from green to orange over a week is the real warning. A lapse is information and a medical risk (tolerance drops; see Chapter 13).

Sorting responsibility

- Mine: my reactions, choices, routines, support.
- Not mine: their use, honesty, recovery timeline.
- Can control: my environment, contacts, plan, what I act on.
- Cannot control: whether they change.

Three questions about staying

1. Is the relationship measurably harming my stability over time (not just “hard”)?
2. Is there a version that does not require me to give up my recovery? Is it realistic, and has it been tried?
3. What support do I have whether I stay or go?

Consider couples or family therapy with a clinician who knows addiction. Do not make major life decisions during acute crisis if you can avoid it, and do not decide alone.

KEY POINTS

- You are responsible for your system only.
- Tell someone; minimal disclosure is enough.
- Track trend, not just snapshot.
- Safety and supports come first.

11. Your Family System

> **In this chapter.** Families seek stability, not necessarily health. When you change, the system pushes back. Understanding roles, old scripts and inherited patterns helps you hold steady with compassion.

Why they resist

Recovery empties the role you played. The family feels anxious and tries to restore the old order. This is predictable and is not a verdict on you.

The common roles (patterns, not diagnoses)

Role	Function in the system
Scapegoat	Absorbs the family's blame
Enabler	Manages consequences, prevents crisis
Hero	Proves the family is fine through achievement
Lost child Role	Becomes invisible to lower tension Function in the system
Mascot	Diffuses tension with humor

Five questions to find yours: What happens when I am in crisis? When I am doing well? What did I do that kept others calm? What was I never allowed to say? Who benefits from my staying as I was?

Old scripts and brief responses

Old scripts include bringing up the past, monitoring, offering alcohol, comparing ("you used to be fun"), or manufacturing crises that need your old function. Respond briefly and without defense: "I remember. I've worked on that. I'm not that person now." Then change the subject. You do not owe a justification, and you do not need agreement to stay who you are.

Inherited patterns

Look at what coping, substances and silences ran through earlier generations. You can have compassion for their limits and still name what it cost you. Understanding origin does not oblige you to continue the pattern.

Terms and distance

Decide what you will and will not do: be present by choice, communicate honestly, keep your stability first; do not absorb blame that predates you or manage other adults' emotions. Enforce terms consistently; unenforced terms teach that they are not real.

Four levels of distance: **reduced contact; structured contact** (set place, length, topics, exit ready); **conditional contact** (only if conditions are met); **no contact** (when harm persists). Protecting your stability is not betrayal.

Pitfalls

- Long defenses and arguments.
- Accepting a role to keep the peace.
- Announcing terms you will not enforce.
- Going to hard events with no plan or ally.

When to get help

Family therapy with an addiction-informed clinician; support groups for families; 988 if family conflict brings crisis.

KEY POINTS

- Resistance is the system, not proof you are wrong.
- Name your role; answer briefly.
- Compassion and accountability can coexist.
- Set and enforce terms; choose your distance.

12. Withdrawal at Home While Parenting

In this chapter. Many parents cannot leave a child for residential care. This chapter gives the planning around the child and the support person. It is not a treatment plan. **Medical supervision comes first.** Alcohol, benzodiazepine, Z-drug, GHB and high-dose gabapentinoid withdrawal must never be done alone or without a clinician. Ask about outpatient or home- based supervised withdrawal, medication for opioid use disorder, and telehealth.

Emergency box

Call 911 (and activate the child's backup care) for: a seizure; severe or worsening confusion; hallucinations that feel real; a racing heart that will not settle, chest pain or trouble breathing; fever with rigidity; any symptom that seems dangerous. Going to hospital is not abandonment; it is making sure you survive for your child. Poison Control: 1-800-222-1222. 988 for suicidal thoughts. SAMHSA: 1-800-662-4357.

First: get a clinician involved

- Tell a prescriber or addiction medicine clinic what you use and that you cannot go inpatient. Ask what can be done supervised at home, what medicine can ease withdrawal, and what warning signs mean "go to hospital."
- Opioid withdrawal is rarely life-threatening, but starting buprenorphine or methadone is far safer than going it alone, and the risk of relapse and overdose is high afterward. Tolerance drops; carry naloxone; remember it does not reverse xylazine or medetomidine.
- Do not rely on supplements instead of care. Any supplement or over-the-counter product: ask your clinician or pharmacist for the right type and dose, and check interactions.

Reframe

The system failed you; you did not fail it. Home withdrawal while parenting is harder than inpatient care, not easier. Your love for the child is why you cannot leave, not why you are failing.

The single metric for the hardest days: fed and safe

Normal parenting standards are deliberately suspended for the worst days, not abandoned.

Before day one (checklist)

- ☐ **Support person** briefed: they handle clinical logistics, not punishment. They hold money, cards, keys and payment apps; they hold the line ("I love you. No.") when craving asks.
- ☐ **Child cover:** backup caregiver for emergencies; school notified as needed; transport arranged.
- ☐ **Food:** no-cooking meals, paper plates, delivery set up by the support person.
- ☐ **Screens and routines:** relax limits during the worst days.
- ☐ **Surrender access:** cash, cards, car keys, payment apps; remove substances and paraphernalia from the home.
- ☐ **Medical plan:** who you will call, which hospital, symptoms that mean go.
- ☐ **Hydration and nutrition:** electrolyte drinks, broth and simple food (water alone is not enough when sweating or vomiting). Ask your clinician what else is safe for you.
- ☐ Night-before routine for school: clothes, bag, lunch, alarms.

Roles

Support person: Withdrawal is physiology, not choice. Expect sweating, tremors, nausea, mood swings, irrational requests. Do not lecture, shame, leave the person alone for long on the worst days, or give in "just once." If danger signs appear, call 911.

Rough arc [typical for some opioid withdrawal; varies by substance]

Days	What to expect	Focus
1	Symptoms starting	Set up systems
2 to 3	Often peak; capacity lowest	Survival; support person leads; screens fine
4 to 5	Plateau then early improvement	Keep standards low
6 to 7	Big improvement	Resume light routines

Days	What to expect	Focus
Week 2	Physical symptoms ease; post-acute symptoms (sleep, mood, craving waves) may emerge	Emotional support

Alcohol and benzodiazepine withdrawal timelines differ and can be more dangerous; follow clinician advice.

Protecting the child

Keep it age-appropriate: “I’m sick and need extra rest. Someone is here to help.” Do not ask the child to guard you or fetch substances. Reassure them it is not their fault. Afterwards, check in and repair.

After the acute phase

Treatment for what comes next: therapy, parent support groups, medication for addiction where suitable, child-focused support, and a plan for relapse that includes the child’s care.

When to get help

Any danger sign above. Child safety concerns. A lapse. All are reasons to call, not to hide.

KEY POINTS

- Medical supervision first; hospital is not failure.
- Fed and safe is the only metric for the worst days.
- Surrender access to money and substances before day one.
- Brief the support person: clinical, not punitive.

13. Arrest, Custody and Release

> **In this chapter.** Arrest can mean sudden loss of supply, medically dangerous withdrawal, and a legal crisis all at once. Preparation helps. This is harm reduction and rights information, not legal advice. Talk to a lawyer.

Medical reality

- **Alcohol, benzodiazepine, Z-drug, GHB and high-dose gabapentinoid withdrawal can cause seizures and delirium tremens and can be fatal** if untreated. People have died in custody.
- Opioid withdrawal is severe but rarely fatal in itself; dehydration and complications are the risk.
- **Declare dependence clearly at medical screening.** Concealing is the dangerous choice. Use specific clinical language and ask that your request be documented: "I am dependent on [alcohol/benzodiazepines]. I am at risk of seizures. I am requesting a medical evaluation. Please document this request." Repeat calmly if dismissed.
- Name the medicines and any prescribers. Medication for opioid use disorder should continue in custody where available; ask for it.

Before it happens

- ☐ **Wallet card** in plain clinical wording: substances you depend on, risks (seizures, withdrawal), current medications, allergies, emergency contact, prescriber.
- ☐ **Brief a trusted contact** on what to say and do if the jail or hospital calls: request medical evaluation formally, bring medication information, find a lawyer.
- ☐ **Memorize numbers** (contact, lawyer, family member). Phones are confiscated.
- ☐ Know whether your area has a public defender.

Preserving yourself inside

Processing is procedure, not a judgment of your worth. Keep your name in your mind; observe without absorbing; remember custody ends; use small choices and routines; keep a role as a witness. Ask for chaplain, counselor or mental-health staff if you are struggling. If you have suicidal thoughts, tell staff clearly.

Release is the most dangerous time

- Tolerance drops during incarceration. A previously usual amount can now kill. Overdose risk is many times higher in the first weeks after release **[Established]**.
- First 72 hours: get to safe shelter, contact your backup person right away, do not be alone, eat, avoid trigger places. Arrange medication for opioid use disorder or a clinic appointment before release if possible.
- If use occurs despite everything: not alone, naloxone present and someone who can use it, start far lower than before, and remember supply may contain fentanyl, nitazenes, xylazine or medetomidine. Naloxone does not reverse xylazine or medetomidine sedation: call 911, support breathing. Do not use alone. Never assume a former dose is safe. A break is not a reset.
- The risk stays elevated longer than it feels.

Pitfalls

- Hiding dependence.
- Begging instead of documenting.
- Assuming “natural causes” will be investigated for you.
- Feeling safe once out.

When to get help

Seizure or confusion in custody: tell staff and demand emergency care. After release: SAMHSA 1-800-662-4357, 988, and local reentry programs.

KEY POINTS

- Declare and document dependence early.
- Prepare card, contact, numbers before anything happens.
- Post-release overdose risk is highest; tolerance has fallen.

- 72-hour safety plan.

14. Living Near People Who Are Not Ready

> **In this chapter.** What helped you may not help someone else, and offering it unasked often backfires. Support without imposing keeps the door open.

Why restraint works

Every adult has authority over their own life. Pushing someone who has not decided to change creates resistance, which postpones readiness. Success is not “they took my advice.” Success is “they felt heard and respected.”

Is it a request?

A request sounds like “What worked for you?” Venting (“I’m so stressed”) is usually not one. When unsure, ask: “Do you want ideas, or do you want me to listen?”

Four errors to interrupt

1.**Unsolicited advice:** “You should try…” makes the person a project. 2.**Rescuing:** solving problems they did not bring, shielding natural consequences. Often it soothes the rescuer. 3.**Future-casting:** “I know exactly where this ends.” Your story is data about your life, not a prophecy about theirs. 4.**Trauma disclosure as credential:** taking over their conversation. Your history is a library, not a stage.

Four practices

1.**Witness:** “I hear you. That sounds hard.” Silence with attention. 2.**Respect the right to make mistakes.** Step in only if: they asked, there is imminent danger to life, or you have a prior agreement covering it. In danger, call 911 or 988. 3.**Regulate your own reaction.** Their chaos triggers your nervous system. That is yours to manage. 4.**Speak to the capable adult:** “What would help?” “How do you see it?”

The permission bridge

1. Disclose briefly: “I’ve been through something similar.”
2. Ask: “Would you like to hear what helped me, or would you rather I just listen?” If yes, share from your own experience (“what worked for me…”), not “you should.” If no, listen. Make one offer, then let go.

Language

Avoid identity labels (addict, junkie, clean, dirty), moral vocabulary and commands. Use “I notice…”, “It sounds like…”, and ask what they think. Describe patterns, not people.

Signs it went well

They kept talking, shared more, seemed lighter, came back. Signs it missed: shut down, got defensive, changed the subject, drifted away.

Safety limits

Respecting autonomy does not mean ignoring danger. Keep naloxone, know the overdose signs, and share resources (SAMHSA 1-800-662-4357). Family members can use support groups and family therapy for themselves.

KEY POINTS

- Listen first; ask before offering.
- One offer, then release.
- Danger overrides restraint.
- Success is a person who feels heard.

15. Mapping Triggers and Rerouting Cravings

> **In this chapter.** A craving is the tip of a sequence that started earlier. Map your triggers, learn the early signals, make if-then plans, and change your environment so the craving fires less often.

Step 1: Map triggers in six categories

Category	Examples
Time	Hour use began, Friday 5 p.m., payday, Sunday evening, anniversaries, holidays
Place	Streets, stores, neighborhoods, cities
People	Companions, contacts, family patterns
Emotion	States the substance used to change: shame, boredom, anger, loneliness
Sensory	Music, smells, sights, tastes
Situation	Conflict, pressure, unstructured free time, social events

Be specific. “Friday 5 p.m. on the drive past the old bar” beats “stress.” Rank each by how often it occurs, how strong the pull is, and how close it came to a lapse. Tackle the highest-danger ones first.

Step 2: Learn early signals

Physical (restlessness, chest or jaw tension, shallow breathing, salivating), mental (romanticizing, rationalizing, planning, minimizing), behavioral (moving toward old places, secrecy, dropping routines), emotional (resentment, creeping low mood, anxiety, “off” feeling). You usually have a window of about 5 to 30 minutes: act on the signal, not at the peak of the craving.

To build your list: review past lapses and near-misses (what happened in the hour before?), then keep a daily log for a month.

Step 3: If-then plans

Write specific plans while calm: “IF it is Friday at 5 p.m., THEN I go to the gym and text my check-in partner.” Vague intentions fail; specific plans run automatically.

Step 4: Four levels of automatic avoidance

1.**Environment:** no substances at home, dealer contacts deleted (not hidden), blocked numbers, changed routes. 2.**Structural barriers:** automatic savings, scheduled activities in danger hours, someone present in known danger windows. 3.**Commitment devices:** accountability others will notice; supervised medication that blocks or deters use (for example naltrexone or others, only if prescribed and monitored). 4.**Replacement routines:** a new destination at the same time and place, repeated until automatic. Average habit formation takes many weeks; the commonly cited figure of about 66 days is an average with wide variation **[Emerging]**.

In the moment

Name it (“This is a craving; it peaks and passes”), move, call someone, change location, eat, drink water, and use your if-then plan. If you use despite this, see Chapter 16, and remember tolerance falls after any break: a usual dose can now kill.

> **KEY POINTS**
>
> - Map specifically; rank by danger.
> - Act in the early window.
> - Write if-then plans while calm.
> - Redesign your environment so the choice rarely arises.

16. Learning from a Lapse

> **In this chapter.** A lapse is information and a medical risk. The Kernel's approach: investigate what happened like a careful examiner (curious, not punishing), within about 24 hours, and fix the conditions rather than promise to "try harder."

Medical first

- After any break, tolerance is lower. A usual amount can cause overdose. Never use alone; naloxone present; remember xylazine, medetomidine and nitazenes in the supply. Naloxone does not reverse xylazine or medetomidine sedation: call 911.
- If alcohol, benzodiazepines, Z-drugs, GHB or high-dose gabapentinoids were involved, do not stop suddenly. Seek medical supervision.
- Suicidal thoughts: 988 now.

Why shame blocks learning

Shame raises stress hormones and reduces the clear thinking you need to analyze the cause. A day-count reset to zero ignores the learning and change you built. Track "days of progress" and "time to return to recovery" as well as streaks. You are not back at the start; the knowledge remains.

The after-action review

A. Facts. Date, time, substance, amount, duration, time since last stable period. Record without commentary.

B. HALT scan. Hungry, Angry, Lonely, Tired. Two or more together raise risk greatly.

C. Place and people. Where was it, who was present, was it a known risky place, was the person alone, was there a plan?

D. Decision chain. Work backward from the use: what was the step before, and before that? Find the earliest point at which a different choice was possible; that is usually the easiest to fix.

E. Five Whys. Ask “why?” five times, answering each in turn. Example: returned to drinking → at a bar → lonely → had not spoken to friends for weeks → ashamed after losing a job → belief that worth equals employment. The root cause (a belief and a shame pattern) is what needs a patch, not just “avoid bars.”

Make the patch

For the root cause pick one concrete change, tell one person, and schedule it. Add the new trigger and early signals to your Chapter 15 map and if-then plans. Review again at one week. If lapses repeat, seek a higher level of care and review medication options with a clinician.

Pitfalls

- Waiting weeks to review.
- Using the review to attack yourself.
- Vague promises as the whole plan.
- Hiding it from your support team.

KEY POINTS

- Medical safety first; tolerance is lower.
- Review within 24 hours, with curiosity.
- Find the root cause with the Five Whys.
- Patch the conditions, and tell someone.

PART C. MINDSET, MONEY, WORK AND COMMUNITY

In this part. Twenty-two short chapters turn a long run of Kernel protocols into practical guides. They cover learning from a lapse, language, money, intrusive thoughts, the body's "echoes", hypervigilance, flat feelings, shame, work, family, the justice system, safer events, digital tools and experimental treatments. Each chapter gives a purpose, a checklist, common pitfalls and when to get help.

Evidence labels used here. **[Established]** = widely accepted clinical fact. **[Emerging]** = plausible, with limited or mixed evidence. **[Kernel hypothesis]** = the Kernel's own framework, not trial- tested. Untagged text is practical advice. Any percentage or timeline marked "Kernel projection" is an estimate, not a trial result. Content is US-centred.

Crisis resources (US). Emergency: **911**. Suicide and crisis: **988** (call or text). Poison Control: **1- 800-222-1222**. SAMHSA helpline: **1-800-662-4357**. Crisis Text Line: text **HOME** to **741741**. For the shared safety rules (never stop alcohol, benzodiazepines, Z-drugs, GHB or high-dose gabapentinoids suddenly; a break is not a reset; nothing unverified is safe; naloxone), see the chapter "The 12 Safety Rules".

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1. Learning From a Lapse

> **In this chapter.** A return to use is information and a medical risk, not a verdict. This chapter gives a 24-hour review that finds the cause and ends in one concrete change, not a renewed promise.

Purpose

Find what failed in the structure, patch it, and keep your progress visible. Shame blocks this work, and shame is linked to repeat lapses.

First, the safety check

- After any time off, **tolerance has dropped**. A usual dose can now kill. If you may use again, do not use alone, and carry naloxone (see “The 12 Safety Rules”).
- If you stopped alcohol, benzodiazepines, Z-drugs or GHB after heavy use, do not stop suddenly again. Call a prescriber or 911 for seizures, confusion or severe shaking.
- If you feel unsafe, call or text **988**.

What to do (within 24 hours, once stable)

- ☐ **Record the facts**: date, time, substance or behavior, what happened. No judgment.
- ☐ **HALT scan**: were you Hungry, Angry, Lonely or Tired?
- ☐ **Scan the setting**: place, people, time of day, cues, availability.
- ☐ **Check your body**: sleep, missed medication, pain, blood sugar, stress.
- ☐ **Trace the decision chain**: find the *first* small deviation (a skipped meeting, a route, a message) and each step after it. Note where the chain could have broken.
- ☐ **Ask “why?” up to five times** until you reach a root cause. Sort it: biological, environmental, emotional, boundary failure, unmet need, or thinking pattern.

- ☐ **Write one patch** with four parts: *what changes, when and where it triggers, how you will check it, who knows.*
- ☐ **Tell one safe person** and update your plan with your prescriber or counselor if medication, sleep or pain played a part.

Intention versus patch

Root cause	Intention (weak)	Patch (strong)
Blood sugar crash at 5 PM	"I'll resist harder"	Protein snack at 4 PM with an alarm; snacks at desk
High-risk place	"I won't go again"	Place blocked on calendar and GPS; alternate route set
Loneliness	"I'll be okay alone"	Three scheduled contacts per week
Family boundary failure	"I'll stand up to them"	Exit after two hours; practiced script; person on standby
"Just this once" thinking	"I'll remember it doesn't work"	Call an accountability person before any use decision
Missed medication	"I'll remember"	Pill organizer, daily alarm, taken with breakfast

A good patch is specific, checkable, doable, right-sized and triggered by a cue.

Count progress honestly

A day count is fragile: 100 days plus one lapse is not zero. Also track **uptime** (days without use divided by total days) and watch the trend. Your learning and gains remain.

Pitfalls

- Writing the review while ashamed, intoxicated or exhausted.
- Ending with "try harder". Willpower is lowest exactly when stress, hunger and fatigue are high.
- Hiding the lapse from your care team. Medication choices depend on it.

When to get help

Same-day contact with your clinician or sponsor if the lapse involved opioids, benzodiazepines, alcohol after dependence, mixing substances, or any thought of self-harm. 911 for overdose, seizure, chest pain or collapse.

> KEY POINTS
>
> **Key points** - A lapse is data and a medical risk. Review it within 24 hours. - Find the first deviation, then the root cause. - End with a structural patch. - Track uptime and trend, not just streaks.

2. Words That Help: Precise Language

> **In this chapter.** The words we use about use can keep it glamorous, personal and permanent. Plainer language lowers the emotional charge. This is a Kernel practice, not a clinical treatment.

Purpose

Replace three habits of speech: **personifying** the substance, **fatalizing** the self, and **mystifying** the experience.

The three habits

Habit	Example	Plain replacement
Personifying	"Tina is calling me"	"I'm having a conditioned craving signal"
Fatalizing	"I always relapse" / "I'm powerless forever"	"I have relapsed on my last several attempts" / "I'm finding this impulse hard to regulate right now"
Mystifying	"The universe opened up"	"My brain's altered state created a sense of significance"

[Kernel hypothesis] Plain wording moves attention from relationship-style feeling toward problem-solving. Many therapists use similar "reframing" ideas, but this exact mechanism is untested.

What to do

- ☐ **Weeks 1-2: notice** your own old words. Keep a tally. Don't correct yet.
- ☐ **Weeks 3-4: translate silently.** Swap "I always fail" for "I haven't found what works yet."
- ☐ **Later: speak the new version** aloud, first to yourself, then to trusted people.

- ☐ Add **“yet”**: “I can’t yet”, “I don’t enjoy this yet”.
- ☐ Use the **craving clock**: start a timer. Cravings usually peak within about 10-15 minutes and fade, though intensity and length vary. Note what you did and what happened.
- ☐ With others who still use the old language, **translate in your head** rather than correct them. Be patient: you used those words too.

Pitfalls

- Banning words. Forbidden words get exciting. Let them fade.
- Using cold language to avoid feeling. The aim is truer, not colder.
- Letting “time-bound” language become denial. Do not minimize real danger (“I’m fine”) when you are not.

When to get help

If hopeless thoughts keep returning (“it will never end”), tell a clinician. Call or text **988** if you think of suicide.

> KEY POINTS
>
> **Key points** - Words shape how a craving feels. - Name the process, not a person. - Replace “always/never” with “so far/yet”. - Don’t lecture others about their words.

3. Rebuilding Your Finances

> **In this chapter.** Debt is a number, and numbers respond to steady action. This chapter covers one sitting to see everything, structures that slow impulsive spending, small automatic payments, and redirecting craving-money into savings.

Purpose

Replace dread with facts, then use structure instead of willpower. This is general budgeting guidance, not legal or financial advice. Consider a nonprofit credit counselor.

Why it gets bad

- **Spending as dopamine**: when pleasure is dulled, purchases, delivery, gambling and subscriptions give small lifts (the “craving tax”).
- **Avoidance**: unopened mail grows, fees accrue, dread grows faster than the real total.
- **Legacy**: card balances, medical and legal bills, back taxes, evictions made under impairment.

What to do

The one-sitting audit - [ ] Gather all mail and statements in one place, with a supporter if shame is heavy. - [ ] Open and sort: bills, collections, legal, tax, other. - [ ] List each account: who, balance, interest rate, minimum, status. Pull your free credit reports. - [ ] Income minus essentials (housing, utilities, food, transport, medication) = what is available for debt. - [ ] Add up the total and write it down. It is finite.

Add friction between impulse and purchase - [ ] *Trusted holder* (first ~90 days, if you choose): a sponsor, relative or counselor holds cards or sees account activity and approves larger spending. This is a crutch for a vulnerable period, not a sign of incompetence. - [ ] *Spending sandbox*: a prepaid card with a fixed weekly amount, no credit line. When it’s empty, that category is closed. - [ ] *Delay*: delete saved cards and shopping apps; wait a set period before non-essentials.

Automate - [ ] Automatic minimum payments just after each payday. - [ ] One extra automatic payment to a single priority debt. - [ ] A small automatic transfer to savings, even a modest amount, so emergencies don't become new debt.

Pick a payoff method. Avalanche (highest rate first) saves the most interest. Snowball (smallest balance first) gives early wins. A hybrid (one or two small balances, then highest rate) suits many people. Pick what you will actually keep doing. If a debt threatens housing, transport or wages, handle that first.

Negotiate (carefully). Ask card issuers for lower rates or hardship programs. For collections, get any settlement in writing *before* paying. Ask for itemized medical bills and hardship discounts. Know your rights under debt-collection law, and seek a nonprofit credit counselor or legal aid for complex cases.

Make progress visible. Keep a visual tracker, plan a small non-spending reward at each milestone, and recalculate your debt-free date after each payment.

Turn cravings into deposits (the "shadow transaction")

A Kernel practice: when a craving hits, estimate what you would have spent and move that amount to a separate savings account ("future self"). Also set a weekly automatic transfer. This is a behavioral trick, not a substitute for treatment. Never use savings to "test" yourself with use, and do not keep cash for use. - The old economics are real: tolerance means more cost for less effect, and past spending is sunk, not a reason to continue. - A rough "return on investment" table in the source is illustrative, not data.

Pitfalls

- Waiting for a windfall. The method is steady payments.
- Spreading extra money across every debt.
- Paying a collector before getting terms in writing.
- Swapping spending for another compulsion (gambling, work); see "Edge Cases".

When to get help

Gambling, hiding spending, or suicidal thoughts about money: call **SAMHSA 1-800-662-4357** or **988**. For legal threats (eviction, garnishment), contact legal aid.

> KEY POINTS
>
> **Key points** - Look at all the numbers once. - Structure beats willpower. - Automate, and focus extra payments on one debt. - Redirect craving-money to savings.

4. Intrusive Thoughts

> **In this chapter.** In early recovery many people have frightening, unwanted thoughts, such as violent images, “what if I hurt someone”, or sudden urges to use. Most are noise, not intent. This chapter explains how to handle them and the clear signs that mean you must get help now.

Emergency box

Get help immediately (988, 911, or a clinician) if any of these are true: the thought will not go away and captures your attention; you are making a plan (how, where, when); you are taking steps toward it or getting means; the thought feels like *relief* or a solution; it feels *consistent* with you rather than alien; you feel intent (“I will”, “I want to”); or you are confused about what really happened versus what you imagined. Also seek urgent care if thoughts come with hallucinations, paranoia or being unable to tell what is real; that is a psychiatric emergency, not a “thought skill” problem.

Noise versus signal

Actionable intent Intrusive thought (noise)(signal)

How it arrives	Uninvited, automatic	May be sought
Feeling	Distressing, unwanted	Calming, like a solution
Planning	None	How, where, when
Fit with values	Feels foreign	Feels aligned
Wording	“What if…?”	“I will / I want to”
Response	Observe, don’t engage	**Escalate now**

People with intrusive thoughts are usually the ones most opposed to acting on them. Horror is a sign of your values.

Why it happens (plain version)

- **[Emerging]** In early recovery the brain's calming systems (GABA) are depleted while excitatory (glutamate) activity runs high. The result can be racing, looping, alarming thoughts.
- The brain is a prediction machine. It runs "what if" scenarios from stored data, including danger and old using routines. A prediction is not a wish.
- **Fighting a thought makes it return stronger** (the "white bear" effect, a well-known psychology finding).

What to do

- ☐ **Notice, name, observe, release.** Say "I'm having a harm-thought" or "my brain is surfacing old using data."
- ☐ **Defer interpretation.** Don't analyze at 3 AM. Tell yourself you'll review it in 24 hours. Most lose power by then. If a thought is still significant, bring it to a clinician or therapist.
- ☐ **Lower cognitive demand** when your mind is foggy: walk, shower, fold laundry, music. Postpone big decisions and hard conversations.
- ☐ **Non-engage rather than suppress.** Let it pass like a car on a road.
- ☐ **Stabilize the basics**: sleep, regular meals, daily movement, less caffeine, less news and social media, slow breathing with long exhales.
- ☐ Ask your clinician before taking any supplement (for example magnesium). Doses and interactions are individual.

Pitfalls

- Confessing the thought repeatedly to get reassurance, or avoiding all triggers (knives, kids), which can feed the loop. A therapist trained in exposure and response prevention helps if this becomes constant.
- Assuming "intrusive" when there is a plan or relief.
- Using alcohol, benzodiazepines or other drugs to stop thoughts.

When to get help

Persisting thoughts beyond early weeks, thoughts that hurt functioning, or any item in the Emergency box. Mention intrusive thoughts to your prescriber; some medications and withdrawal states cause them.

KEY POINTS

Key points - A thought is not a command. - Don’t fight; don’t engage; defer analysis. - Plan, relief, intent or inability to dismiss = get help now. - Sleep and routine reduce the noise.

5. Phantom Smells, Body Echoes and Visual Artifacts

> **In this chapter.** Months into recovery you may smell a substance that isn't there, feel an old "rush", or see flickers at the edge of vision. These are usually learned echoes that fade. A few need a medical check.

Emergency box

Get same-day medical care for a new, persistent, or worsening visual or sensory problem, especially with confusion, fear, voices, or loss of touch with reality. Call **911** for seizure, chest pain, stroke symptoms or suicidal danger, or **988**. Psychosis (seeing or hearing things that others don't, paranoia) needs psychiatric care, not self-management.

The three kinds of echo

- **Phantom smell**: smelling the substance with nothing present. The brain predicts what usually follows a cue (a song, a place, a feeling), and the smell center is part of the emotional memory system.
- **Body echo**: tingling at injection sites, a flush or "rush", throat or nasal sensations, jaw clenching, chest tightness. The body completes a learned sequence.
- **Visual artifact**: shadows at the edge of vision, shimmering, trails, sparks. These can follow heavy stimulant, psychedelic, cannabis use or sleep loss. They usually fade, but see a clinician if they persist or increase. **Persistent visual changes after psychedelic use can be a diagnosable condition and deserve an eye and neurology check.**

Why they happen

- Cue, then prediction, then sensation. During use the sequence repeated thousands of times. In recovery the cue still fires and the brain predicts, but nothing arrives. Each unreinforced echo is a small "extinction trial" that weakens the link. **[Established]** (conditioning and extinction are well-supported).

- **[Kernel hypothesis]** Some smells come from fat-stored metabolites released during exercise, fasting or sweating. Fat storage of some compounds (such as THC metabolites) is real. Claims that this explains phantom smells, or that GSTM1/GSTT1 gene deletions make it worse, are unproven.

What to do (three steps)

- ☐ **Verify.** Pause. Does anyone else smell it? Does it follow you? Was there a cue? Do exercise or sweating precede it? Check a real pulse. If something feels physically wrong (chest pain, racing heart, trouble breathing), treat it as real and get care.
- ☐ **Overwrite the signal.** Strong competing input: coffee beans, peppermint, citrus peel, mint or sour candy, cold water on the face, an ice cube, bright light, a walk outside. Avoid suppressing it.
- ☐ **Name it aloud.** "This is a conditioned echo. It will pass. I am noticing it; I am not obeying it." Then tell yourself what you will do next (a call, a meal, a walk).

What speeds things up

Sleep, regular exercise, steady meals and not reinforcing the echo with use. **[Emerging]** Supplements marketed for "detox" or "BDNF" have little proof here. Ask your clinician or pharmacist before taking any; dose with your clinician or pharmacist.

What to expect (Kernel projection, varies widely)

Period	Pattern
Weeks 1-4	Echoes most frequent, then begin to drop
Months 1-3 Period	Clear decrease; easier to manage Pattern
Months 3-6	Occasional echoes tied to cues
Months 6-12	Rare
Beyond 1 year	Mostly only with unusual, strong cues

Pitfalls

- Treating an echo as proof you are relapsing or going crazy.
- Believing a phantom smell is a "sign" to use.

- Ignoring hallucinations or paranoia.

When to get help

Echoes that are constant, frightening, involve voices or beliefs that others don’t share, or come with sleeplessness and agitation: urgent psychiatric or medical evaluation.

> **KEY POINTS**
>
> **Key points** - Echoes are learned and fade with time. - Verify, overwrite, name. - Psychosis or persistent visual change needs a clinician.

6. Hypervigilance: Teaching the Alarm to Stand Down

> **In this chapter.** After long threat, the nervous system stays on guard. You are not paranoid or weak: your alarm learned well. This chapter shows body-first calming, a short thinking routine, and a slow, staged way to widen "safe" territory.

Emergency box

If alarm comes with flashbacks you can't leave, voices, beliefs that people are plotting against you, thoughts of suicide or violence, or you can't tell what is real: seek urgent care. Call **988** or **911**. Hypervigilance after trauma can be PTSD, which is treatable (trauma-focused therapy; medication when appropriate). See the chapter on trauma and substances.

Why the alarm stays on

- [Established in broad terms] Repeated threat strengthens fear circuits, so small cues trigger the whole response.
- Traumatic memories may stay "unfiled", returning as nightmares or flashbacks.
- The default assumption flips from "probably safe" to "dangerous until proven safe", which costs huge mental energy.
- **[Kernel hypothesis]** A "slow-clearing" COMT gene variant (Met/Met) would keep stress chemistry elevated for hours. COMT testing is not clinically validated for this use. Never delay treatment waiting for a test. Whatever your genes, the order is the same: **body first, mind second**.

What to do

Body first (when the alarm fires) - [ ] **Shake or move**: tense and release, shake out arms and legs, walk briskly. This burns off stress chemistry. - [ ] **Cold water on the face** (the "dive reflex") slows the heart. [Established as a physiological reflex.] If you have a heart condition, faint easily or have an eating disorder, ask your clinician first. - [ ] **Long exhale**: breathe in for about 4, out for about 6-8, for several minutes. If breath-holding feels unsafe or triggers panic, just lengthen the exhale.

Mind second (when the body has settled) - [ ] **Pause and name it**: “The alarm is going off.” - [ ] **Check the evidence**: Is this danger now, or a memory? What can I see, hear and verify? What would a neutral observer see? - [ ] **Write a new tag aloud**: where you are, what the trigger is (a phone is a device I can ignore), and when this is (the present, not then).

Widen safety in stages (Kernel projection, individual pace) | Stage | Territory | Time frame | | —|—|—| | 1 | One “safe room” with a daily safety narration | weeks 1-4 | | 2 | Whole home | months 1-3 | | 3 | Home plus two or three familiar places | months 3-6 | | 4 | Most familiar settings; alert only to real warning signs | months 6-12+ |

Keep a **closed-alarms log**: date, trigger, what the alarm said, what you found, result. Most alarms turn out false. Seeing that builds trust.

Pitfalls

- Trying to think your way out while your body is flooded.
- Avoiding everything. Avoidance protects short-term but shrinks life.
- Numbing with alcohol, benzodiazepines or cannabis, which worsen anxiety and sleep over time.
- Stopping prescribed medication suddenly. See “The 12 Safety Rules”.

When to get help

Alarm that disrupts sleep, work or relationships for weeks; nightmares; flashbacks; panic. Ask for trauma-informed care.

> **FOR CLINICIANS**
>
> **For clinicians.** Screen for PTSD, panic and substance-induced anxiety. Pharmacogenomic or COMT results are not a basis for withholding standard treatment.

> **KEY POINTS**
>
> **Key points** - The alarm is learned, not a flaw. - Body first, then evidence, then a new tag. - Widen safe territory step by step.

7. The Flat Phase and Finding Grip

> **In this chapter.** After you stop, life may look grey and muted. This is a common, expected phase while reward sensitivity recovers. The Kernel idea of "friction" means doing real, effortful, present-moment things so you can feel contact with your life again.

Emergency box

Flatness that comes with hopelessness, not eating, not sleeping, giving away belongings or thoughts of death may be depression, not calibration. Call or text **988**. Don't wait it out.

What the grey is

[Established in outline; timelines are Kernel projections] Repeated artificial reward turns down the brain's sensitivity. Once the substance stops, ordinary pleasure comes back slowly. This "post-acute" flatness is expected, and anhedonia can last weeks to months. Many people's reward recovers over months to a couple of years, but there is wide variation.

Phase	What you may feel	Rough time (Kernel projection)
Acute withdrawal	Crash, exhaustion, physical distress	1-4 weeks (some withdrawals are dangerous; see substance chapters)
Grey phase	Muted pleasure, flat mood	~2-6 months
Early recovery	Glimpses of color	~6-12 months
Stabilized	Full range returns	~12-24 months

What to do

- ☐ **Name it**: "This is calibration, not proof that life is empty."

- ☐ **Don’t chase a replacement**: other substances, gambling, extreme risk, compulsive work or spending relocate the same loop.
- ☐ **Check for depression, ADHD, trauma, sleep apnea, thyroid problems and medication effects** with your clinician. Treating these is part of recovery.
- ☐ **Add friction**: pick activities that require your body and attention.

Type	Purpose	Examples	Rough frequency
Kinetic play	Gravity demands full presence	skating, climbing, surfing, skiing	2-3x/week
Synchronized movement	Belonging in a shared effort	team sports, rowing, group classes	1-2x/week
Tool-mediated precision	A held object gives the hands an anchor	bowling, archery, pool, darts	2-3x/week
Third place Type	Be present without Purpose performing	park, library, café, Examples garden	daily if needed Rough frequency
Creative making	Channel constructive energy	instrument, woodwork, cooking, gardening	ongoing project

Pick by state: craving surge = kinetic; social anxiety = tool-based; loneliness = synchronized; overwhelm = third place; restless = making; stuck in grey = alternate kinetic and third place.

- ☐ **Allow clumsiness.** The smoothness of use was borrowed. Awkward, effortful, real is progress.
- ☐ **Check the whole system.** Quitting one thing while overworking, overspending or over- exercising is migration, not recovery. Ask in each area (body, emotions, relationships, work, money, time): am I feeling this, or numbing it?

Pitfalls

- Picking an extreme sport as a “dopamine replacement” without training or safety gear.
- Treating friction as punishment. Choose activities you can sustain.

When to get help

Flatness beyond about 2-3 months that worsens, or any suicidal thinking. Consider seeing a psychiatrist for depression or ADHD assessment.

KEY POINTS

Key points - Grey is common and temporary. - Don’t swap one loop for another. - Do real things that take effort and attention.

8. Intensity After the Fire: Redirecting a High-Voltage Nervous System

> **In this chapter.** Some people who lived through addiction, combat, or constant crisis find ordinary life flat or suffocating, and may create chaos without meaning to. The Kernel treats this intensity as an asset to aim, not a defect to sedate. This chapter is practical, and its biology is largely **[Kernel hypothesis]**.

Emergency box

If intensity shows up as reckless danger, rage, mania (days of little sleep, grandiosity, spending sprees), or thoughts of harming yourself or others, get evaluation. **988**, **911**. High intensity can coexist with trauma, ADHD, bipolar disorder or borderline traits; this chapter doesn't replace treatment for them.

The ideas

- **The peacetime void**: after extreme conditions, ordinary signals feel too weak to register. Expect flatness and restlessness; it is not ingratitude.
- **Burdenscaping** ("self-shrapnel"): unconsciously building crises (money trouble, fights in good relationships, last-minute panic, abandoning projects that go well) to match an inner intensity.
- **Misfit paradox**: believing chaos made you capable. The *capacity* is yours; the chaos is waste heat.
- **Environment as cues**: places and people tied to use drain willpower. Moving can help, but a new city doesn't fix cravings, and distance from treatment and support can hurt. Decide with your care team; if you can't move, change routes, rooms and routines.

What to do

- ☐ **Take inventory** of what you did well under pressure (vigilance, focus, endurance, loyalty). Match it to roles that need it: security, quality assurance, emergency work, trades, athletics, risk analysis, crisis response.

- ☐ **Give the engine a real, hard target before it invents one**: a demanding project or training goal with a deadline and structure.
- ☐ **Physical intensity**: interval training, combat sports, climbing, team sports. Build up with proper coaching.
- ☐ **Cold exposure and breathwork**: [Emerging] some studies report mood or energy changes, and the source's "up to 250% dopamine" figure is not a recovery treatment claim. Cold immersion can cause cardiac stress; forceful hyperventilation can cause fainting. Do not do either alone near water, and not if you have heart disease, seizures, pregnancy or panic disorder without medical clearance.
- ☐ **Find a tribe**: a gym, service group, volunteer fire or rescue, recovery community.
- ☐ **Install a governor**: define when full intensity is on (training, project) and when it is off (home, quiet time). Use entry and exit rituals such as music, a walk, a breath.
- ☐ **Integrate, don't assimilate**: aim for a life that fits who you became, not a performance of "ordinary".
- ☐ **Protect rest, sleep and relationships.** Intensity becomes burnout when it replaces them.

A 90-day sketch (Kernel suggestion) | Days | Focus | |—|—| | 1-30 | Stabilize, physical routine, sleep, look for a community | | 31-60 | Capacity inventory, try several outlets | | 61-90 | Commit to one mission, set zones and rituals |

Genetics (use with caution)

[Kernel hypothesis] COMT and MTHFR variants are said to shape intensity needs (slow COMT = prefers deep complexity with less chaos; fast COMT = prefers high stimulation). Evidence for this is weak, and testing is optional. Never choose a career or treatment on genotype alone, and never delay treatment for results.

Pitfalls

- Mistaking a new addiction (ultramarathons, high-stakes trading, extreme risk) for recovery.
- Using "I'm over-built" to dismiss trauma, ADHD or mood disorders.
- Pursuing danger for the rush.

When to get help

Repeated self-made crises, risk-taking, or "boredom" that leads toward use: talk to a therapist.

> **KEY POINTS**

> **Key points** - Aim intensity, don’t try to kill it. - Give it a hard, structured target. - Add a governor and protect rest.

9. Knowing Your Baseline: The Tare, Premiums and Closing a Role

> **In this chapter.** Three Kernel metaphors in one place: the *tare* (your real baseline), the *coverage model* (recovery as paying premiums), and the *character autopsy* (closing the role you played). It ends with a short guide to using TV as a mirror.

The tare (baseline)

A tare is the empty weight of a container, the zero you measure from. Your body, mind, relationships and money each have one. Addiction pushes past capacity, then reshapes the container so the "zero" shifts. - Stage 1: the substance fills a real gap. Stage 2: tolerance. Stage 3: you use just to feel normal. Stage 4: the baseline collapses. - **Measure your actual current baseline**, not your ideal one: minimum sleep that works, foods that stabilize you, activity that doesn't deplete you, mood floor, what relationships need from you now. - **Healed scars are tender.** Don't re-expose healed areas to their original stressors without support.

Coverage model

- ☐ **List your premiums**: sleep, meals, movement, medication, support contacts, meetings or therapy, calm practice. Aim to "pay" daily or weekly.
- ☐ A **lapse in routines is not cancellation**: restart them. Don't treat a missed day as a reason to quit.
- ☐ Set a **Monday reset**: a short weekly review of the premiums.

Character autopsy

Do this once, in writing, when stable (not during a lapse or at 3 AM). - [ ] What did the "character" (the using persona) do for you? Safety, power, belonging, permission to feel or not feel? - [ ] What was it protecting you from? - [ ] What did it cost, and who paid? - [ ] Which of its traits are worth keeping (drive, humor, courage) and where do they belong now? - [ ] Share it with a therapist or sponsor if you can.

The drive migrates

The addictive drive (intensity, obsession, willingness to sacrifice) doesn't vanish. Give it a real address: a craft, a sport, training, building something. Start with low-cost real challenges like an indoor climbing gym or beginner skating. Skills take years; keep the goal safe, supervised and reachable.

Using TV as a mirror (optional)

The Kernel's "Apropos Therapy" uses well-made stories about addiction to build distance and recognition. - [ ] Watch with a **stable day, a support contact on standby**, and ideally a co- viewer. - [ ] Let recognition happen without acting on it. Journal what you recognized. - [ ] **Watch the whole arc, including the consequences.** Power-fantasy scenes alone can trigger craving. - [ ] Skip or stop if you feel pulled toward use or have a recent lapse. Craving while watching is information, not proof it is working. **[Kernel hypothesis]** that this is therapeutic; there are no trials.

Pitfalls

- Using metaphors to avoid concrete action.
- Seeing the "character" as your whole identity or the "actor" as blameless. You own repair.

> KEY POINTS
>
> **Key points** - Measure your real baseline. - Routines are premiums; lapses are recoverable. - Close the old role on paper, keep the drive, give it a safe target.

10. Honest Reporting and Objective Testing in Care

> **In this chapter.** Many patients learn that mild honest answers get a pamphlet, while severe answers get treatment, so they exaggerate. This chapter is for patients and clinicians, and it argues for better conversations and, where useful, objective data. It does not teach anyone to fake symptoms.

What to do (patients)

- ☐ **Be accurate and specific**: how often, how long, what you've tried, how it affects work, sleep, relationships, safety. Specifics get taken seriously more than adjectives.
- ☐ **Say what you need**: "I've tried X and Y, and I'm still struggling. What are the next options?" Ask what would trigger escalation, and when you'd be reviewed.
- ☐ **Be upfront about substance use and all medications and supplements.** Safe prescribing depends on it. Honest disclosure of use is protected under confidentiality rules in most clinical settings (42 CFR Part 2 for many treatment programs).
- ☐ **Bring records**: symptom log, sleep diary, prior treatments, lab results, and a supporter's observations.
- ☐ **Ask about next steps** when you hear "lifestyle changes": referral, follow-up date, who to call if worse.
- ☐ If you feel dismissed, **ask for a second opinion**, or ask the clinician to document your request.
- ☐ Never exaggerate to get a controlled medication. It can lead to unsafe prescribing, loss of trust and legal consequences.

What the evidence says

- **[Established]** Screening questionnaires (PHQ-9, GAD-7, pain scales) measure reported symptoms and are not definitive tests.
- **[Emerging]** Pharmacogenomic testing (for example CYP450 variants) can help guide *some* psychiatric medication choices and is covered by some insurers. Evidence for outcomes is mixed. It is not a diagnostic test for addiction or anxiety.

- **[Kernel hypothesis]** That COMT, MTHFR, homocysteine or similar markers can "authorize" treatment without symptom report, or establish a "biological basis" for anxiety. These claims are unproven. Reasonable labs (B12, vitamin D, thyroid, iron, liver, metabolic panel) can find treatable contributors.

FOR CLINICIANS

- Perceived skepticism and gatekeeping produce strategic reporting. Validate, offer options, and agree on follow-up.
- Use objective data (labs, history, collateral, prescription monitoring program) to *support* care, not to adjudicate honesty.
- Don't withhold evidence-based treatment pending genetic results.

Pitfalls

- Equating exaggeration with moral failure.
- Using test results as a substitute for listening.
- Over-reading a single genetic result.

When to get help

If you can't get care, call **SAMHSA 1-800-662-4357** for referrals. In crisis, **988**.

KEY POINTS

Key points - Honest, specific, request-focused reporting works best. - Questionnaires aren't lab tests; genes aren't verdicts. - Better care relationships reduce the need to exaggerate.

11. Medications, Cognition and Legal Capacity

> **In this chapter.** Some medications given in jails and hospitals can dull memory, expression and thinking. For people facing court, this can look like guilt or indifference. This chapter is for defendants, families and defense teams. It is not legal or medical advice. It contains no taper schedules; any change in psychiatric medication belongs to the prescriber.

Emergency box

Never stop psychiatric medication, benzodiazepines, mood stabilizers or antipsychotics suddenly. Abrupt changes can cause seizures, rebound psychosis, or severe mood episodes. Medication changes must be medically supervised. If someone is in custody with confusion, seizure, severe agitation with overheating, or suicidal thoughts, call **911** or ask jail medical staff for urgent evaluation.

How medications affect courtroom capacity [Established in outline]

Class	Example effects	How this can look in court
Antipsychotics	Blunted facial expression, slowed movement, sedation	“No remorse”, flat affect
Benzodiazepines	Memory impairment, sedation	Gaps in recall, can’t remember agreeing to things
Mood stabilizers (some)	Slower thinking, word-finding trouble, tremor	Seems evasive, nervous
Sedating antidepressants	Drowsiness, emotional blunting	Nodding off, seems indifferent
Anticholinergics	Memory and concentration problems	Confusion

The source also calls the combination “chemical suppression” and attributes it to institutional intent. That is a strong claim not supported as stated: these drugs treat real conditions, and many people need them. The point is narrower: **side effects can look like guilt or incompetence and should be documented.**

What to do

Defendants and families - [ ] Ask for a **written list of every medication, dose, and time given**, and the reason for each. - [ ] Tell your lawyer early about any medication effects on memory, speech or expression. - [ ] Ask the prescriber: Is each drug needed? Is there a less sedating option? Is the dose right? Can the anticholinergic "corrector" be avoided? Never self-adjust. - [ ] Ask your attorney whether an independent evaluation of competence is appropriate. **Defense teams** - [ ] Obtain medication administration records, including as-needed doses before statements or hearings. - [ ] Consider whether a competency evaluation, a pharmacologist or forensic neuropsychologist, or a continuance is warranted. Legal strategy is for qualified counsel in your jurisdiction.

Timelines. The source suggests many weeks to months for cognition to recover after medication changes (combined regimens: several months). That is a **Kernel projection**. Recovery varies by drug, dose, illness and health. Evaluate the individual.

FOR CLINICIANS

- Review anticholinergic burden; deprescribe when safe. Taper decisions (including benzodiazepine tapering, where a cross-taper to a longer-acting agent is one option to individualize, following current guidelines) are the prescriber's.
- Document functional effects. Communicate with counsel only with appropriate consent and records authorization.

Pitfalls

- Assuming a quiet or flat defendant has no remorse.
- Stopping medication to "look normal". It can cause crisis and worsen legal outcomes.
- Treating this chapter as a legal strategy manual.

When to get help

Public defender or legal aid; the treating psychiatrist; **988** for crisis.

KEY POINTS

Key points - Sedating or blunting medicines can distort how someone appears. - Document, ask, and involve the prescriber and lawyer. - Never stop these medicines abruptly.

12. Diversion, Court and Probation

> **In this chapter.** The justice system has several points ("intercepts") where a person with a substance or mental health condition can be steered toward treatment. This is general information, not legal advice. Decisions belong with a qualified attorney or public defender.

Purpose

Move from a "criminal track" to a "treatment track" where possible, and build a real re-entry plan even when jail or prison happens.

The six intercept points

Stage	What to do
Before arrest / police contact Stage	Crisis services, mobile crisis teams, What to do community treatment (call **988** in a crisis)
Early court (arraignment, pre-trial)	Ask your lawyer about drug courts, mental health courts and pre-trial diversion. This is the most flexible point
Jail or prison	Request assessments early; get documents; ask for treatment access
Release	Arrange appointments, medication and benefits before the date
Community supervision	Arrive with a plan already in place

What to do

- ☐ **Tell your lawyer about treatment history, diagnoses and what's available locally.** Bring a clinician's letter if you have one.

- ☐ **Ask about specialty courts** (drug court, mental health court, veterans court) and diversion programs, eligibility, and what they require.
- ☐ **Document the clinical need** that preceded the charge (assessments, treatment records), with your consent and attorney guidance.
- ☐ **Inside:** request mental health and substance use assessments; keep certificates and completion letters; ask about community "in-reach"; verify whether Medicaid is suspended or terminated while incarcerated (rules vary by state); ask about medication for opioid use disorder in custody (many facilities now offer it).
- ☐ **Before release:** get a **confirmed appointment**, not just a referral. Ask about a bridge supply of medication and who holds your records. Start benefits reactivation paperwork before release where allowed. Plan housing and transport. Read the next chapter.
- ☐ **On probation or parole:** arrive at the first meeting with a written plan (appointments, treatment, housing, work). Know your conditions, drug testing rules, and who to call if you slip. Tell your officer early about problems; ask your lawyer how to do this safely.
- ☐ **Peer support** (recovery coaches, reentry programs) helps bridge legal and medical systems.

Pitfalls

- Waiting passively. Cold releases (no appointment, no medication, no housing) carry the highest overdose risk.
- Treating diagnosis as an excuse. Courts respond to documented engagement and a plan.
- Skipping legal advice. Do not make legal decisions without an attorney.

When to get help

Public defender, legal aid, local reentry offices; **SAMHSA 1-800-662-4357** for treatment referral; **988** if despair rises.

> **KEY POINTS**
>
> **Key points** - The earlier the plan, the more options exist. - Ask your lawyer about specialty courts. - Get appointments, not referrals.

13. The First Weeks After Release

> **In this chapter.** The first days and weeks after leaving jail, prison or a long treatment stay are among the most dangerous for relapse and overdose. This is a practical “airlock” plan. It is not medical or legal advice; plan it with your health care team and re-entry coordinator.

Emergency box

Tolerance drops during incarceration or any extended abstinence. A dose that was normal before can cause fatal respiratory failure now, and the supply is often contaminated with fentanyl, nitazenes, and sedatives such as xylazine or medetomidine. **Naloxone reverses opioid overdose but does not reverse xylazine or medetomidine.** Still give it, call **911**, and support breathing. Never use alone. Carry naloxone and teach people near you how to use it. Alcohol and benzodiazepine withdrawal can cause seizures: medical care only.

What changes in the body and mind

- A high-control environment shrinks everyday decision-making; freedom brings overwhelm.
- Hypervigilance, sleep problems, difficulty with crowds, noise and choices are common. Some call this “post-incarceration syndrome”. It is not a formal diagnosis, but the experience is real.
- “I did my time, I deserve a drink” feels logical, and is dangerous because tolerance is gone. What you deserve is a life.

What to do

Before release - [ ] Ask your prescriber about **medication for opioid use disorder** (buprenorphine, methadone, or extended-release naltrexone) or alcohol use disorder options. Buprenorphine and methadone reduce overdose death; extended-release naltrexone requires being opioid-free first and carries its own overdose risk if use resumes after it wears off. The choice is medical. - [ ] Have a **confirmed appointment** within days, medication access, ID, phone, benefits, transport. - [ ] Line up a trusted person to meet you.

First 24-72 hours (the “airlock”) - [ ] **Reduce choices.** Let a trusted person handle food, transport, and basics. Don’t make major decisions. - [ ] **Go straight to your plan**: appointment, meeting, safe place to sleep. - [ ] **Don’t go back to old places** or old contacts. Map risky areas and routes before you leave. - [ ] **Move your body** (walk, gym) for the energy and boredom. Plan something physical for day one. - [ ] **Sleep, eat regularly, drink water.** - [ ] **Set a daily schedule** and hold it. The content matters less than the structure. - [ ] **Keep naloxone with you** and tell someone where it is. **Weeks 1-4** - [ ] Attend appointments and recovery meetings. - [ ] Work toward housing, ID, income, health coverage. - [ ] Reconnect slowly with family; expect awkwardness. - [ ] Take any stimulation hunger to safe outlets.

Your transition pattern

People differ. Some crave stimulation and drama (plan a physical outlet from day one). Others freeze, withdraw, or are overwhelmed by crowds and choices (reduce input; go slowly). Name your pattern with your support person and plan around it.

Pitfalls

- One “celebration” use. This is a frequent cause of fatal overdose.
- Leaving without medication, appointment or housing.
- Doing it alone.

When to get help

911 for overdose or seizure. **988** for crisis. **SAMHSA 1-800-662-4357** for same-week treatment. Call your reentry coordinator or recovery coach.

> KEY POINTS
>
> **Key points** - Tolerance is gone; the first use can kill. - Plan appointments, medication and a ride before release. - Reduce choices for 72 hours; keep a daily structure.

14. Parents, Children and the "I Contaminate Them" Fear

> **In this chapter.** Many people in recovery stay away from children because they believe they are harmful. That belief is usually shame disguised as protection. Reconnecting, safely and gradually, is good for children and for recovery. This chapter doesn't replace court orders or child-welfare requirements.

Purpose

Separate **guilt** (I did harmful things; I can repair them) from **shame** (I am harmful; I must hide). The first leads to repair; the second leads to absence.

Check first

- **Safety**: you are not using; no weapons, drugs, or paraphernalia where children are; stable housing, sober transportation.
- **Legal**: follow all court orders (supervised visits, testing, classes). Ask your attorney or caseworker before changing contact.
- If you are in active withdrawal or may become unstable, don't be the only caregiver.

What to do

- ☐ **Notice the old story**: "They'd be better off without me" is history, not today's assessment. Name it and ask, "What does this child need from me right now?"
- ☐ **Show up in small, complete doses**: ten minutes of undistracted play, one full bedtime story, attending one event for its whole duration.
- ☐ **Be consistent.** Fewer visits you keep beat grand gestures you cancel.

- ☐ **Offer age-appropriate honesty** without graphic detail, and without making the child your emotional support:
  - oAges 3-7: “I was sick for a while. I’m getting help. It wasn’t your fault.”
  - oOlder children and teens: more detail on request, steady and calm; no graphic stories.
- ☐ **Keep adult content with adults**: therapy, sponsor, support group, not your child.
- ☐ **Aunts, uncles, godparents, older siblings**: you don’t need to be a parent to be present.
- ☐ **Offer a safety plan**: if you relapse, tell a safe adult. Children should never be asked to keep secrets about use.
- ☐ **Know the family risk**: addiction runs in families (genes and environment). Teach children early that it is a health issue, that they can talk to you, and that help exists.

What kids learn from recovery

That difficulty is survivable, mistakes can be repaired, and asking for help is normal. [Kernel hypothesis] The “inoculation” framing is not trial-tested, but the principle is consistent with research on parental openness and support.

Pitfalls

- Over-confessing, or burdening the child.
- Staying away “to protect them” for years.
- Promising what you can’t keep.

When to get help

Family therapy, parenting programs, your attorney or caseworker. If a child is in danger: **911**. For parenting stress or despair: **988**.

For families and supporters. Welcome small steps and clear boundaries. Ask the person to share a safety plan. Don’t use the child as messenger.

> KEY POINTS
>
> **Key points** - Guilt repairs; shame hides. - Small, regular presence rebuilds trust. - Follow court orders; protect children from adult details.

15. Returning to Work

> **In this chapter.** Returning to work after addiction means managing the gap on your resume, protecting your recovery from overwork, and using what recovery built. This is general guidance, not legal advice.

Purpose

Re-enter at a pace that protects your recovery, and talk about the gap honestly and privately.

Privacy and the gap

- Treatment records are confidential. You generally don't owe an employer medical details. In the US, the ADA protects people in recovery (not those currently using illegally), but rules vary; ask a legal aid or disability-rights group.
- **Your account of the gap must be true.** The source offers four true frames. Use only the one that applies: | Frame | Example | If pressed | |—|—|—| | Health matter | "I took time off to address a health issue. It's resolved and I'm ready to return." | "I keep details private, but it doesn't affect my ability to do this work." | | Family caregiving | "I was caring for a family member." (only if true) | "It was a private family matter." | | Independent work | "I did freelance and consulting work." (only if true) | Be ready with real examples. | | Career reassessment | "I took a sabbatical to reassess my direction." (only if true) | Name what you did and learned. | Don't say "I am cleared" unless a clinician has said so. Don't invent work or credentials.
- **Interview question about convictions or gaps**: ask a re-entry organization or attorney about "ban the box" and record-clearing rules in your state.

What to do

- ☐ **Return at a slower pace than before** for roughly 6-12 months if you can (part-time, lower stress). A steady job for two years beats a crash at six months. [Kernel projection]

- ☐ **Describe skills, not origins**: crisis management, rebuilding after setbacks, spotting problems early, understanding people, showing up daily, honest self-assessment.
- ☐ **Protect recovery time**: keep meetings, therapy and medication appointments on your calendar. Ask about flexibility.
- ☐ **Set work limits in advance**: maximum weekly hours, no work communication after a set time, a phone setting that lets you be off, scheduled rest days.
- ☐ **Watch for workaholism**, the socially rewarded substitute. Warning signs: can't rest, identity fused with output, rising hours, anxiety without work.
- ☐ **Know your workplace policies** (drug testing, EAP). Prescribed medication is generally allowed; discuss with your prescriber and, if needed, occupational health.
- ☐ **Consider peer-friendly employers** and recovery-friendly workplaces.

Pitfalls

- Overworking to "prove" yourself.
- Over-sharing or lying. Both create risk.
- Skipping support because the job is "going well".

When to get help

Job stress that increases cravings: talk to your clinician and sponsor early. Employment rights questions: legal aid, state vocational rehabilitation. **988** if despair or suicidal thoughts rise.

> KEY POINTS
>
> **Key points** - Keep the account true and private. - Go slower than you think you need to. - Set limits before you need them.

16. Spirituality Without Dogma

> **In this chapter.** Many recovery programs assume belief in God. If you can't or don't believe, you can still gain the benefits: humility, belonging, awe, meaning. This chapter offers secular options and respects religious ones.

Purpose

Find "something larger than yourself" without pretending to believe what you don't.

Two traps

- **Forced belief**: going through the motions. Honest practice works better.
- **Nihilism**: "nothing matters." This tends to drain motivation and meaning.

Four secular "larger things"

It is	What it offers
The community of people who have walked this road	Wisdom beyond your own; less isolation
Physical reality (laws that don't care about wishes)	Acceptance: I adjust to it
Cause and consequence	Agency: what I do matters
Time	Perspective: this will pass

What to do

- ☐ **Translate, don't argue.** When someone says "God gave me this sobriety," hear gratitude and humility and reply to that: "I'm glad you found what works."

- ☐ **Set a gentle boundary** if someone pushes conversion: “I appreciate you sharing. My path is different, and it’s working for me.”
- ☐ **Practice awe weekly**: stargazing, time in nature, a view, music, art, learning something vast. Evidence links awe with less self-focus and more connection. **[Emerging]** Some studies also suggest lower inflammation and anxiety.
- ☐ **Build meaning from five sources**: connection, craft, growth, contribution, experience.
- ☐ **Explore options**: SMART Recovery, Refuge Recovery, LifeRing, Secular AA groups, or faith-based groups if they fit.
- ☐ **Hold your own pace.** Mindfulness, service, journaling or ritual all count.

The traditions’ map (Kernel idea)

The Kernel sees an old pattern in many traditions: the seven deadly sins, the three poisons, the commanding self all describe ways a “container” gets pushed past its limits. **[Kernel hypothesis]** The Kernel also says that some substances “simulate” spiritual states without the groundwork. It is a metaphor, not a scientific claim, and it shouldn’t be used to judge anyone’s spiritual experience. Don’t use psychedelics or dissociatives to “shortcut” spiritual work. Risks include relapse, psychosis and adulterants.

Pitfalls

- Dismissing every faith voice. Many people in recovery benefit from them.
- Replacing the substance with a high-demand group that demands unquestioning obedience. Watch for control, isolation and exploitation.
- Spiritual bypassing, using “acceptance” to avoid treatment.

When to get help

Spiritual crisis with despair or suicidal thoughts: **988**. Unusual beliefs, voices or mania: urgent psychiatric care.

> KEY POINTS
>
> **Key points** - You don’t have to believe to recover. - Community, awe and meaning are available without theology. - Hold boundaries kindly.

17. Shame, Secrecy and Reputation

> **In this chapter.** Guilt says “I did something wrong”. Shame says “I am something wrong”. Guilt helps repair; shame blocks it. This chapter covers who to tell, how to handle judgment, and how reputation rebuilds.

Guilt versus shame

GuiltShame

About	A behavior	Who you are
Time	Specific, finished Guilt	Feels permanent Shame
Effect	Repair, amends	Hiding, withdrawal, relapse
Resolves by	Amends and changed behavior	Slower identity work, connection, often therapy

Shame is learned, often in childhood or in active addiction. Affirmations alone rarely reach it. Connection and evidence do.

What to do

Choose your circles (selective disclosure) | Circle | Who | How much | |—|—|—| | Inner | Partner, therapist, mentor, 1-3 close friends | Full history | | Trusted | Family and friends, recovery community | The outline: “I’m in recovery from a serious substance problem” | | Wider | Colleagues, acquaintances | Nothing required |

Privacy isn’t deception. One person who knows everything and stays can break the secret’s power.

When others judge - [ ] Recognize that some people judge because your story frightens them (“it could be me”). - [ ] Don’t take their judgment as evidence about you. - [ ] Respond calmly or not at all; set boundaries. - [ ] Seek out people who treat you as a whole person.

Rebuild reputation - [ ] **Be consistently reliable**: do what you said, when you said. - [ ] **Quiet competence** and **repair actions** (amends where safe). Evidence beats declarations. - [ ] **Don't make recovery your only identity.** Mention it when it helps someone or sets a boundary, not as a default introduction or a badge.

Five shame practices - [ ] **Check the timestamp**: when did this happen? - [ ] **Update the file**: add the chapters that followed (amends, years of change). - [ ] **Name the voice**: "That's shame talking." - [ ] **Tell one safe person.** - [ ] **Take one small action** that matches the person you are now.

Pitfalls

- Total secrecy, which costs energy and blocks intimacy.
- Total disclosure to the wrong people.
- Forcing apologies or amends that could harm the other person. Ask your sponsor or therapist first.

When to get help

If shame is linked to suicidal thoughts, trauma or abuse, see a therapist (trauma-focused care helps) or call **988**.

> KEY POINTS
>
> **Key points** - Guilt repairs; shame hides. - Tell at least one person everything. - Reputation rebuilds through steady evidence.

18. Gut and Microbiome: The Inner Ecology

> **In this chapter.** The gut and brain communicate, and heavy substance use disrupts the gut. The Kernel's "inner ecology" idea says restoring gut health may ease mood and craving. Much of this is plausible but unproven. Basic gut-friendly habits are safe; most specific claims are **[Emerging]** or **[Kernel hypothesis]**.

What's reasonably established

- **[Established]** The gut contains trillions of microbes. The gut-brain axis (nerves, immune signals, hormones) is real. Alcohol and some other substances can harm the gut lining and microbial diversity.
- **[Emerging]** Gut microbes affect mood-related chemicals, and probiotic or diet trials show small, mixed effects on anxiety and depression. Effects on cravings and addiction treatment are not established.
- **[Kernel hypothesis]** That a disrupted microbiome "demands" the substance; that microbes pass between household members and drive family addiction; that people sense each other's "ecology" by smell and reject them; that Candida overgrowth drives craving. These are not supported by good trials. Don't treat them as diagnosis. (The "90% of serotonin is made in the gut" figure is true of gut serotonin, but it doesn't act directly on the brain.)

What to do (low-risk)

- ☐ Eat **more fiber and plants**: vegetables, legumes, oats, nuts, fruit.
- ☐ Include **fermented foods** (yogurt, kefir, sauerkraut, kimchi) if you tolerate them.
- ☐ **Cut alcohol and heavy sugar and ultra-processed food.**
- ☐ **Sleep, move, manage stress.**
- ☐ **Clean the living space**, clear paraphernalia and old cues. It's good for hygiene and psychology.
- ☐ **Be patient**: diet-based changes in gut flora take weeks to months.

Probiotics and supplements

- Probiotics are sold for many strains (for example *Lactobacillus* and *Bifidobacterium* species, *Saccharomyces boulardii*). Evidence is modest and strain-specific. **Ask your clinician or pharmacist**, especially if you are immunocompromised, have a central line, have had recent surgery, or are seriously ill; some probiotics have caused infections in these groups.
- Doses and product choice: dose with your clinician or pharmacist.
- **"Candida cleanse" or antifungal regimens**: only if diagnosed and prescribed by a clinician.
- **Antibiotics** change the gut; take them only when prescribed.

Medications and the gut

The source warns that long-term symptom-only medication may leave root causes untouched. Don't stop antidepressants, anti-anxiety medication, or medication for opioid or alcohol use disorder without your prescriber. Medication and gut health aren't opposites.

Genetics (CYP450)

[Emerging] Enzyme variants affect how quickly you break down some medicines. Pharmacogenomic testing can help some prescribing decisions. It doesn't explain addiction on its own. Never delay care for test results.

Pitfalls

- Spending heavily on gut tests and supplements with unclear value.
- Blaming a "dirty gut" for cravings and delaying proven treatment.
- Trying fecal transplant outside a medical setting (see Chapter 22). **Never attempt do-it- yourself transplants.**

When to get help

Blood in stool, weight loss, persistent diarrhea or vomiting, severe pain, fever: medical care. Mood or craving crisis: **988**, **SAMHSA 1-800-662-4357**.

> **KEY POINTS**

Key points - Gut and mood are linked, but cravings aren’t simply a bacterial demand. - Eat plants, fiber and ferments; cut alcohol. - Ask a clinician before supplements or “cleanses”.

19. Festivals and Big Events: Hearing, Heat, Hydration, Supply

> **In this chapter.** Festivals concentrate hidden risks: permanent hearing damage, heat illness, over-and under-drinking water, and contaminated drugs. This is harm-reduction information. It does not encourage use. If you are early in recovery, ask yourself whether an event is a good idea now (see the chapter on high-risk situations).

Emergency box

Call 911 or go to the medical tent for: body heat that keeps rising, hot dry or very sweaty skin with confusion, severe headache, vomiting, fast heartbeat, seizure, collapse, or unresponsiveness. Stimulants such as MDMA, amphetamines and cocaine can hide overheating. Cool the person (shade, wet cloths, ice at neck, armpits and groin) while waiting. For suspected opioid overdose: **naloxone and 911**. **Naloxone does not reverse xylazine or medetomidine**, so keep giving breathing support until help arrives. **Poison Control 1-800-222-1222** for questions.

Hearing

- **[Established]** Sound above about 85 dB over time harms hearing; main stages are often 100-115 dB. Hair cells don't regrow. Ringing after a show is a warning sign.
- Use **high-fidelity earplugs** (not just foam). Take quiet breaks. Move away from speaker stacks (bass travels through bone). Rotate position.

Heat

- ☐ Wear **light, loose, moisture-wicking clothing**; avoid wet cotton.
- ☐ Take shade breaks before you feel bad. Know where the cooling tents are.
- ☐ Cool pulse points (neck, wrists, elbows, behind knees) when warm.

- ☐ Don’t mix alcohol or drugs with heat and exertion.

Hydration

- ☐ **Alternate water with electrolyte drinks or salty snacks.** Drinking large amounts of plain water for hours can lower blood sodium (hyponatremia), which causes headache, nausea, confusion and can be fatal.
- ☐ **Pee check**: pale straw = good; dark = drink more with electrolytes; clear and frequent = stop plain water.
- ☐ Don’t force fluids beyond thirst.

Supply risk (harm reduction)

The unregulated supply, including pills, powder and “party drugs”, can contain fentanyl and other potent opioids (**nitazenes**), plus sedatives such as xylazine and medetomidine, in amounts you can’t see or smell. - **No test guarantees safety.** Fentanyl test strips don’t reliably detect nitazenes or other contaminants. A negative result doesn’t mean “safe”. - **Never use alone.** Have a sober friend who knows how to give naloxone and call 911. - **Carry naloxone** and know how to use it. - **Counterfeit pills** (for example “oxycodone” or “Xanax”) are a common cause of death. - If you take prescribed medication, bring enough and keep it in the original container. - If in recovery, **the safest plan is not to use**; after any break, tolerance is lower.

Other practical points

- ☐ **Meeting point and time** agreed in advance; phones die and networks overload.
- ☐ Find the **harm-reduction tent** and medical station on arrival.
- ☐ **Check on each other.** Leave if someone seems unwell.
- ☐ **Grounding for panic or overload**: sit or lie down, reduce noise and light, slow your breathing with long exhales, name things you see, hear and feel, and seek help.
- ☐ **Sleep and food**: plan for them.
- ☐ **Have a recovery exit plan**: a person to call, a way home, a rule for leaving if you feel pulled.

Pitfalls

- Assuming “natural” or “just one” is safe.
- Trusting a dealer or friend’s word about contents.
- Drinking only water in heat; skipping sleep.

When to get help

Medical tent for heat, drug effects or distress. After the event: **SAMHSA 1-800-662-4357**, **988**, or your sponsor or clinician.

> **KEY POINTS**
>
> **Key points** - Protect your ears; keep cool; balance water and salt. - No drug test makes the supply safe. - Never use alone; carry naloxone; call 911 early.

20. Edge Cases: Rare Loops and "Respectable" Compulsions

> **In this chapter.** Any activity that reliably relieves distress can become a compulsion. This chapter covers rare or overlooked patterns: body-focused repetitive behaviors, impulse-control conditions, workaholism, exercise, relationships, screens and hobbies. If you recognize yourself, you are not weird, and help exists.

The three signs of a compulsion

1.**Loss of control**: you do it despite deciding not to; stopping brings disproportionate distress.
2.**Continuation despite harm** to health, relationships, money, work. 3.**A loop**: trigger, behavior, relief, crash, trigger. The "behavior" slot can hold almost anything.

For hobbies, ask: Can I skip it for a week without distress? Do I hide how much I do? Has it escalated? Do I do it instead of facing problems? Three or more "yes" answers suggest compulsion.

Quick reference

Pattern	What it is	What helps	When to get help
Hair-pulling, skin-picking, nail or skin biting (BFRBs) Pattern	Repetitive body-focused actions, often in automatic states; regulate tension or boredom What it is	Awareness tracking, barriers (gloves, bandages), substitute movements ("competing response"), stress care; **habit-reversal** What helps **training / comprehensive behavioral therapy**	Visible damage, infection, distress; see a therapist trained in BFRB treatment When to get help
Kleptomania	Urge to steal unneeded objects; tension then relief, then shame	**Professional treatment essential**; therapy; consequence awareness; legal counsel	Any legal trouble or distress; psychiatric evaluation

Pattern	What it is	What helps	When to get help
Pyromania	Rare; repeated deliberate fire-setting **treatment essential**; with tension and relief	**Professional** risk management	Immediate evaluation
Intermittent explosive disorder	Sudden, disproportionate aggression, then remorse	Therapy (CBT, anger-regulation skills), sometimes medication, sleep and substance review	Any violence or threats: 911 if danger; urgent clinical care
Workaholism	Can't stop working despite harm	Hard hour limits, scheduled rest, identity beyond work	Burnout, health problems, family collapse
Exercise compulsion	Exercising through injury, panic when unable to	Mandatory rest days, review of body image or eating issues	Injury, eating disorder: medical and therapy
Love, sex and relationship compulsion	Using relationships to Therapy, support regulate emotion; withdrawal-like distress at endings	groups (for example SLAA, CoDA), slow dating, building a relationship with yourself; some people choose a **break from dating (the source suggests 6-12 months, a Kernel suggestion)**	Abuse, stalking, or inability to leave an unsafe relationship
Streaming and scrolling Pattern	Designed for compulsion (variable reward, autoplay, infinite scroll) What it is	Screen-time audit, remove autoplay and notifications, scheduled limits, phone-free zones, name the avoided What helps feeling	Sleep loss, school or work harm When to get help
Any hobby gone too far	Activity itself neutral; the relationship has changed	Time and money limits; include others; examine what it avoids	As above

What to do

- ☐ **Name the function**: what does it relieve? Boredom, anxiety, loneliness, rage, emptiness?
- ☐ **Treat the underlying driver**: anxiety, ADHD, trauma, OCD-spectrum conditions and depression often sit underneath.

- ☐ **Use the universal loop tools**: delay and urge-surfing, change the setting, add friction, tell someone.
- ☐ **Add real replacements** (see “The Flat Phase and Finding Grip”).
- ☐ **Treat “respectable” compulsions seriously**, even when praised.

Genetics (cautious)

[Kernel hypothesis] MTHFR and COMT variants may shape reward sensitivity and compulsion risk. Evidence is weak; testing is optional. No test is needed to start treatment.

Pitfalls

- Shame (“just stop”). This makes loops worse.
- Treating one behavior while another expands.
- Classifying any enjoyed hobby as an addiction. Look at control, harm and escalation.

When to get help

Psychiatrist or psychologist for BFRBs, impulse-control disorders, compulsions causing harm, or any risk of harm to others: **911** or **988**.

> KEY POINTS
>
> **Key points** - Compulsion is about control, harm and the loop, not the activity. - BFRBs and impulse-control conditions are treatable, not character flaws. - Check “respectable” compulsions too.

21. Digital Recovery Tools

> **In this chapter.** Some apps are medical devices backed by trials; most are consumer tools. Use few, pick well, and clean your phone first.

What's available

- **Prescription digital therapeutics** (FDA-authorized): reSET and reSET-O (CBT for substance use; reSET-O is an add-on to buprenorphine treatment) and Somryst (CBT for insomnia). [Established that they were authorized.] Their maker went bankrupt in 2023 and availability has changed. **Ask your clinician what is currently offered and covered.**
- **Digital CBT for insomnia** (several evidence-based programs) is first-line for chronic insomnia and avoids sedative risks. Poor sleep is a major relapse trigger. See your prescriber before using sleep medication; benzodiazepines and Z-drugs carry dependence risk and should never be stopped suddenly.
- **AI craving prediction** (wearables, GPS, mood data to forecast risk): **[Emerging]** early research; not a proven standalone treatment. Alerts are only useful if you act on them.
- **Mindfulness-Oriented Recovery Enhancement (MORE)**: evidence-based therapy trained in groups and some digital formats. Aims to restore savoring.
- **Community and tracking apps**: meeting finders (such as Meeting Guide), SMART Recovery tools, sobriety counters, peer networks. Useful for connection; evidence varies.
- **Telehealth** can provide buprenorphine and counseling; access varies by state.

What to do

- ☐ **Clean your phone first**: delete supplier contacts, delivery or trading apps, and cue-heavy social feeds. Turn off location sharing with using friends.
- ☐ **Choose no more than four tools**: one clinical (if prescribed), one monitoring or tracking, one skills, one community.
- ☐ **Check each app**: published trials (not testimonials), privacy policy, HIPAA coverage if it holds health data, whether your clinician can see your progress, business model.

- ☐ **Limit notifications** to prevent alert fatigue.
- ☐ **Share data with your clinician** so it informs treatment.
- ☐ **Review monthly**: Is it used? Is sleep improving? Is phone use going up? If so, simplify.

Signs it's working

Alerts are accurate and actionable; you complete most lessons; your clinician uses the data; sleep and mood improve.

Pitfalls

- App-hopping and notification overload.
- Free apps that sell health data.
- Using apps instead of people.
- Using an app as a safety net for dangerous withdrawal or suicidality. Those need clinicians (**988**, **911**).

> KEY POINTS
>
> **Key points** - Few tools beat many. - Clean the phone, then add support. - Ask what's covered and currently available.

22. Experimental Treatments: Physician-Only Territory

> **In this chapter.** Some people with treatment-resistant problems look at investigational options. This chapter explains why caution matters. **Nothing here is instruction for self-treatment.** All items below are **[Emerging]** or **[Kernel hypothesis]**, and are for discussion with a licensed physician.

Safety notice

Experimental, off-label or unregulated approaches can cause infection, heart problems, psychiatric destabilization, drug interactions, contaminated products, and death. **Do not buy unregulated products. Do not try do-it-yourself versions. Do not stop your current medication to "try something".** Standard care (medication for opioid or alcohol use disorder, therapy, peer support, treating depression, ADHD, trauma and sleep) works for most people. If you've struggled with that, ask for a second opinion and a specialist (addiction medicine, psychiatry), and ask about **clinical trials** (clinicaltrials.gov, SAMHSA 1-800-662-4357).

Fecal microbiota transplant (FMT)

- **[Established]** FMT is a recognized treatment for recurrent *Clostridioides difficile* infection, with cure rates above 90% in that setting. It is performed by clinicians using screened donors and regulated products.
- [Kernel hypothesis / Emerging at best] Using FMT to reduce craving or treat addiction. Early research is limited and inconsistent. There are no approved addiction indications.
- **Risks** include transfer of infections (including drug-resistant bacteria), and serious illness or death have been reported with inadequately screened donor material. Regulatory rules apply.
- **Physician-only.** Never attempt a home or "friend donor" version. Do not follow online instructions.

Peptides and other “frontier” compounds

[Kernel hypothesis / Emerging] Online sellers promote peptides, nootropics, and “biohacking” compounds for craving or brain repair. Most lack human trials for addiction, and products are often unregulated, mislabeled or contaminated. **No self-administration guidance is given here.** If a physician suggests a compound under a trial or regulated protocol, ask: - [ ] What evidence exists for *my* condition? - [ ] What are the risks and interactions with my medications? - [ ] Is it legal and sourced from a regulated pharmacy or trial? - [ ] What monitoring and emergency plan exist? - [ ] What happens if it doesn’t work?

Other frontier topics

- Psychedelic-assisted therapies, ketamine, brain stimulation (such as TMS) and others have varying evidence and legal status. TMS and some others are used in clinics for depression. Discuss with a psychiatrist. Don’t buy substances. A relapse risk, psychosis risk and adulterant risk remain.
- Medicines like naltrexone, N-acetylcysteine and others have mixed evidence for various conditions. Your prescriber decides.

How to approach it wisely

- ☐ Exhaust or optimize standard care first.
- ☐ Bring a trusted person to the appointment.
- ☐ Be alert to promises of cures, secrecy, large cash payments or pressure.
- ☐ Don’t use “protocols” from social media or sellers.

Pitfalls

- Seeing an experimental option as a rescue.
- Hiding experimental use from your care team: interactions can be dangerous (for example serotonin syndrome when serotonergic products are combined).
- Spending savings on unproven products.

When to get help

Medical emergency: **911**. Poisoning concern: **Poison Control 1-800-222-1222**. Crisis: **988**. Treatment help: **SAMHSA 1-800-662-4357**.

FOR CLINICIANS

For clinicians. Document informed consent, check interactions (especially serotonergic agents), prefer trial enrollment to off-label use, and report adverse events.

KEY POINTS

Key points - FMT is established only for recurrent *C. difficile*; for addiction it is unproven. - Peptides and “biohacks” are not safe to self-administer. - Physician supervision, regulated sourcing, and trials only.

End of Part C.

PART D. FRONTIER TOPICS, HEALTH AND CONTEXT

> **In this chapter:** what the Kernel calls the "experimental branch" (fecal transplant, brain stimulation, psychedelic-assisted therapy, peptides, NAD+), what the evidence actually supports, and why foundations come first. This chapter is for understanding and for conversations with a physician. It contains no doses and no instructions for self-administration, on purpose. Resources are US-centred.

Emergency box. Call **911** for chest pain, fainting, seizure, severe confusion, a very fast or irregular heartbeat, trouble breathing, or suicidal behavior after any procedure or product. Call **988** (call or text) for a suicidal crisis. Poison Control: **1-800-222-1222**. SAMHSA helpline: **1-800-662-4357**. Crisis Text Line: text **HOME** to **741741**.

Purpose

For most people, recovery runs on the basics: sleep, food, movement, medication where indicated, therapy, and community. A small group has done those things well and is still struggling. This chapter maps the frontier tools they may hear about, so they can ask good questions instead of buying hope from the internet.

Evidence labels used here: **[Established]**, **[Emerging]**, **[Kernel hypothesis]**. See the Handbook chapter "The 12 Safety Rules" for the rules that apply to everything below.

The tools, one by one

Tool	What it is	Status and evidence	Physician-only?
Fecal microbiota transplant (FMT)	Screened donor stool material placed in the gut by a clinical team	**[Established]** for recurrent *C. difficile* infection. **[Emerging]** (early research, mostly animal data) for mood, craving or alcohol use	Yes. Home attempts risk serious infection

Tool	What it is	Status and evidence	Physician-only?
Transcranial magnetic stimulation (TMS)	Magnetic pulses to a brain region, no surgery or anesthesia, outpatient	**[Established]** for depression, and cleared for some other uses; one device is cleared for smoking cessation. **[Emerging]** for craving in other addictions	Yes (clinic)
Esketamine / ketamine Tool	Dissociative medicine given in a monitored setting What it is	Esketamine nasal spray is FDA- approved for treatment-resistant depression **[Established]**. Use for addiction is off-label **[Emerging]** Status and evidence	Yes Physician-only?
Psilocybin-assisted therapy	Guided session with a Late-stage trials for psychedelic plus preparation and integration therapy	depression; addiction research is earlier **[Emerging]**. Not approved for general clinical use in the US	Research or licensed settings only
MDMA-assisted therapy	Same model, for PTSD	FDA declined approval in 2024; status may change **[Emerging]**	Research settings only
Ibogaine	Powerful psychedelic studied for opioid dependence	Evidence is limited and mostly observational **[Emerging]**. The Kernel's claim that it "resets" opioid tolerance is a **[Kernel hypothesis]**. Schedule I in the US	Not a self-directed option. Serious cardiac risk
BPC-157, Selank, Semax, Epitalon and similar peptides	Research compounds Mostly animal or	small studies **[Emerging]**. Not FDA- approved. Online products are often mislabeled, contaminated, or fake	Physician-only, ideally in a research context. No self-administration
NAD+ (infusions, nasal, oral precursors)	Cellular energy coenzyme, depleted by heavy drinking	Some clinics use it during withdrawal; evidence is thin **[Emerging]**. Oral precursors are ordinary supplements to run past a clinician	Infusions: clinic only

Notes on the riskiest items

Ibogaine. It prolongs the heart's QT interval and can cause fatal rhythm problems, especially with heart disease or QT-prolonging medicines. People have died at facilities without proper cardiac monitoring. Any use would need an ECG, continuous cardiac monitoring, medication review, and psychiatric screening by physicians. It is not a cure, and it does not remove the need for aftercare. **A break is not a reset:** after any process that lowers opioid tolerance, a return to a previous opioid dose can be fatal. Naloxone and a plan matter even more.

Psychedelics and ketamine. All can trigger or worsen psychosis in vulnerable people. Several interact with common medicines (see the 12 Safety Rules on medication interactions). Outcomes depend heavily on setting, screening, and the integration work afterward. None is a standalone cure.

Peptides. Experimental material is not a reason to skip care. Nothing unverified is safe. If a physician is involved, they decide the compound, the source, and the monitoring; this handbook will not.

FMT. The gut–brain axis is real **[Established]**. Whether transplant changes craving or mood reliably in people with addiction is unknown **[Emerging]**.

Foundation before frontier

A person spending heavily on advanced supplements while sleeping five hours, eating mostly processed food and not moving is not optimizing. That is expensive avoidance. The Kernel's rule of thumb, a **[Kernel hypothesis]** in its exact proportions, is that the basics account for most of the achievable gain and the frontier tools for a small remainder.

Sequence:

1. Sleep (see the chapter "Sleep Repair in Recovery").
2. Nutrition and hydration.
3. Movement.
4. Medication, therapy and community.
5. Only then, with a physician, anything on the frontier list.

What to do (checklist)

- ☐ Write down what you have already tried (medication, therapy, peer support, residential care) and for how long. Treatment-resistant means a fair trial of the standard options, not one attempt.
- ☐ Ask an addiction physician or psychiatrist whether a standard option you haven't tried would come first (for example, a medication for opioid or alcohol use disorder).

- ☐ If you are interested in TMS, esketamine or a trial, ask for a screening that covers heart, seizure history, psychosis or bipolar history, pregnancy, and every medicine and supplement you take.
- ☐ Ask who provides monitoring during and after, and what happens in an emergency.
- ☐ Arrange integration support before the procedure: therapist, sponsor or peer, a safe ride home, and a plan for the first week.
- ☐ Keep naloxone at home if there is any opioid history.
- ☐ Tell your recovery team what you are doing. Secrecy is a relapse risk.

Pitfalls

- Treating a tool as a substitute for the work. Ibogaine cannot teach stress management on an ordinary Tuesday. TMS cannot delete the contact in your phone. FMT cannot repair a relationship. NAD+ cannot supply a reason to get up.
- Buying peptides or “protocols” from social media or unregulated sellers.
- Traveling for a procedure without a check on monitoring, emergency care and records.
- Stacking several experimental tools at once, which hides what is working and multiplies interactions.
- Assuming a good experience means you are done. The window after a procedure is when the psychological and relational work becomes easier.

When to get help

- Right away: chest symptoms, fainting, seizure, severe agitation, hallucinations that do not clear, suicidal thoughts, or a high fever after FMT. Call 911 or 988.
- Soon: worsening mood, new mania-like energy, or a surge of craving after a procedure. Contact the prescriber or clinic that supervised it.

FOR CLINICIANS

- Frame frontier options as adjuncts after evidence-based treatment has been tried.
- Screen for QT risk, seizure and psychosis/bipolar history, pregnancy, and interacting drugs before any referral.
- Document what is off-label or investigational, and prefer trials or regulated programs.
- Pharmacogenomic factors can matter for ketamine or other drugs; see the chapter on genetics and testing (labeled as emerging there).

KEY POINTS

- Most people recover with the basics. The frontier is for those who have tried them properly.
- Only a few of these tools have solid evidence, and mostly for depression or *C. difficile*, not addiction.
- Ibogaine carries a real risk of fatal heart rhythm problems.
- Peptides and unverified products are physician-only and not safe to self-source.
- Tools open a window. The work inside it decides the outcome.

Sleep Repair in Recovery

In this chapter: why sleep breaks in early recovery, what each substance does to it, how infections and inflammation add to the problem, and a layered repair plan that starts with free habits and ends with therapy and clinician-guided options. Evidence labels are used for supplement and biology claims. No doses are given; ask your clinician or pharmacist. **Emergency box.** Never stop alcohol, benzodiazepines, Z-drugs (such as zolpidem), GHB, or high-dose gabapentinoids suddenly; withdrawal can cause seizures and can be fatal. Call 911 for seizure, confusion, hallucinations, or severe agitation. Sudden confusion, unsteady walking, or abnormal eye movements in someone who drinks heavily is a brain emergency (see the chapter on co-occurring conditions). Suicidal thoughts: 988.

Purpose

Nearly everyone in early recovery has a stretch of bad sleep. It is not weakness and not “just stress.” The sleep system was running on chemical override and has to rebuild. It takes weeks to months, not days. Good sleep is also one of the strongest protections against relapse.

How sleep normally works

Sleep runs in cycles of roughly 90–110 minutes: light sleep, deeper sleep, slow-wave (deep) sleep for physical repair, and REM for emotional processing. Deep sleep dominates early in the night; REM later. The brain clears waste during slow-wave sleep. This requires a stable body clock, regulated stress hormones (cortisol), and low inflammation.

What each substance does to sleep

Substance	What it does to sleep	Withdrawal pattern
Stimulants (cocaine, methamphetamine, amphetamine)	Shortens sleep, cuts deep sleep and REM, shifts the body clock	Heavy sleeping at first, then weeks to months of insomnia

Substance	What it does to sleep	Withdrawal pattern
Opioids	Sedation without restful sleep; less deep sleep and REM; can cause breathing pauses	Severe insomnia for days; restless legs, sweats, vivid dreams; disturbed sleep can last months
Alcohol, benzodiazepines, Z- drugs	Fall asleep quickly, but sleep is fragmented, REM is suppressed then rebounds	Rebound insomnia can be severe and last months. Withdrawal can be medically dangerous
Cannabis	Faster sleep onset, less REM	Insomnia and vivid dreams for about 3–6 weeks
Several substances	Damage across systems	Longer, layered insomnia; needs layered treatment

Withdrawal and heavy use also raise inflammation, which feeds back into sleep.

Inflammation, infection and sleep

Sleep is partly regulated by the immune system. Immune signals such as IL-1β and TNF-α help set sleep depth, which is why you sleep heavily when ill **[Established]**. Chronic infection or inflammation shifts these signals from “sleep” to “stay alert,” fragmenting sleep. Chronic pain and stress hormones add to this.

Three pathways recur across infections:

1. Raised inflammatory signals disrupt deep sleep.
2. Persistent stress activation raises cortisol, which works against melatonin.
3. Inflammation can divert tryptophan (a building block for serotonin and melatonin) toward other pathways **[Emerging]**.

Infection-specific notes

Condition	How it disrupts sleep	What helps (with your prescriber)
HIV	Sleep problems are common, linked to immune activation and brain immune cells; sleep be contributing; never can track disease control **[Emerging]**. Some antiretroviral drugs, notably efavirenz, can cause insomnia and vivid dreams **[Established]**	Ask your HIV clinician whether your regimen could change or stop antiretrovirals on your own. Screen for sleep apnea if you snore, are tired in the day, or sleep unrefreshingly

Condition	How it disrupts sleep	What helps (with your prescriber)
Herpes (HSV) and shingles	Tingling or pain before outbreaks, outbreak discomfort; poor sleep may raise the risk of reactivation **[Emerging]**. Shingles can leave nerve pain (post-herpetic neuralgia) that wrecks sleep	Daily suppressive antivirals for frequent outbreaks are a prescriber decision. Shingles vaccination is recommended for adults in many age groups; ask your clinician. Gabapentinoids, patches or other nerve-pain options are prescriber decisions, with misuse and dependence cautions in recovery
Syphilis	Fever and inflammation early; in neurosyphilis, direct brain involvement can cause insomnia, headache, vision or symptoms with a syphilis hearing change, personality change, memory problems	Syphilis needs medical treatment. Sleep aids will not fix it. New neurological history need urgent evaluation. Fever and chills in the first day after treatment (Jarisch-Herxheimer reaction) are expected and temporary
Gonorrhea, chlamydia Condition	Mostly through How it disrupts sleep complications: pelvic inflammatory disease, chronic pelvic pain, joint pain	Complete antibiotic What helps (with your prescriber) treatment and follow-up testing; treat partners. Pelvic-floor physical therapy helps chronic pelvic pain
HPV	Often through fear, shame and worry about cancer or disclosure rather than the virus itself	Facts: most HPV clears on its own; regular screening catches problems early. Counseling with a sexual-health therapist helps
Several at once	Effects can compound	Treat each infection; build the shared foundation below
Diagnosis insomnia		

A new diagnosis (HIV, herpes, HPV or any other) can cause its own insomnia: racing thoughts, nightly waking, early waking. It is a threat response, not a character flaw. Three parts, three responses:

1.**Unfinished thinking.** Schedule 20 minutes in the early evening to write out every question and next step. Close the file. Put open items on a list for your clinician. 2.**Shame.** Infections are transmitted by contact. They say nothing about your worth. Therapy aimed at STI-related shame helps. 3.**A stuck stress rhythm.** Consistent wake time and morning light (below) are the main reset.

The repair sequence

Layer 1: Basics (first weeks)

- Same wake time every day, even after a bad night. The wake time anchors the body clock.
- Outdoor light within the first hour of waking.
- Move your body daily; even a 20-minute walk helps.
- Drink water and eat enough protein.
- Dim lights and cut screens in the last hour or two before bed. A 90-minute wind-down helps.
- Keep the room cool, dark and quiet.
- No alcohol as a sleep aid. It fragments sleep and rebounds.
- Limit caffeine, especially after midday. Sensitivity varies.

Layer 2: Check for treatable causes

Ask a clinician to look for sleep apnea, restless legs, low iron, thyroid problems, pain, depression, anxiety, PTSD, and sleep-disrupting medicines (for example some antiretrovirals, stimulants, steroids, and some antidepressants). Treating these is often the real fix.

Layer 3: Cognitive behavioral therapy for insomnia (CBT-I)

CBT-I is the first-line treatment for chronic insomnia **[Established]** and carries no addiction risk. Components: a consistent sleep window matched to actual sleep, keeping the bed for sleep, and reworking catastrophic thoughts about sleep loss. Digital programs exist, including an FDA- authorized prescription app. Ask your clinician, as some elements (like sleep restriction) need care with bipolar disorder, seizures, or heavy sleepiness.

Layer 4: Nutrients and supplements (clinician or pharmacist first)

These are **[Emerging]** for recovery sleep. Nothing here is a substitute for Layers 1–3.

- Magnesium, L-theanine, glycine and low-dose melatonin are commonly discussed for sleep. Melatonin works best as a short-term clock signal at low physiological amounts; more is not better. Magnesium needs caution with kidney disease.
- Vitamin B6 in its active form (P-5-P) and methylated folate/B12 are discussed because they are cofactors in the serotonin–melatonin chain. This reasoning is a **[Kernel hypothesis]** for most people. Too much B6 can damage nerves **[Established]**.
- SAMe and other activating supplements can trigger mania in people with bipolar disorder **[Established concern]**. Ashwagandha, curcumin and some others have liver cautions. Omega-3 can add to bleeding risk with blood thinners.

- Do not use dopamine-raising supplements while psychotic symptoms are active; wait for psychiatric clearance.
- **5-HTP** only on physician advice, and never with any serotonergic drug (SSRIs, SNRIs, MAOIs, MDMA, tramadol, some others); serotonin syndrome is dangerous. A physician sets any timing after stopping a substance; the conservative window applies.
- A simple claim you may hear, that gut serotonin supplies the brain's melatonin, is oversimplified; gut-made serotonin does not cross into the brain directly. Tryptophan from food is the route.

Layer 5: Prescription sleep medicines

Avoid benzodiazepines and Z-drugs for insomnia in recovery; they carry addiction risk, damage sleep structure and cause rebound insomnia. If you are already taking them, do not stop suddenly; any reduction is a supervised plan from your prescriber (see the 12 Safety Rules). Other prescription options exist; this is a prescriber's decision, ideally one who knows your history.

What to expect (timeline, Kernel projections)

Stage	What's happening	Focus
Days 1–14	Worst insomnia; nervous system rebounding	Comfort, Layer 1, medical supervision for alcohol or benzodiazepine withdrawal
Weeks 2–8	Sleep structure rebuilding; body clock off	Strict wake time, morning light, check for treatable causes
Months 2–4	Improving but fragile	CBT-I, keep habits steady
Months 4–12	Clear gains	Track sleep; slowly drop supports with your clinician
Year 1+	Often normal or much improved	Keep the habits

The first night you realize you actually slept, not passed out or sedated, is a milestone. Note it. People with HIV or long-term inflammation may need more time, not a different plan.

Pitfalls

- Chasing supplements while skipping a fixed wake time.
- Using melatonin in large doses every night.
- Using cannabis or alcohol "just to sleep."

- Blaming yourself for insomnia that has a medical cause.
- Staying in bed awake for hours (it trains the brain that bed means alertness).
- Starting a supplement stack with no pharmacist check on your medicines.

When to get help

- Insomnia for more than a few weeks that affects daytime function.
- Loud snoring, gasping, or witnessed breathing pauses.
- Sleeplessness with racing thoughts, little need for sleep, or grandiose energy (possible mania) or with hallucinations or paranoia (psychiatric care).
- Suicidal thoughts: 988.
- New headaches, vision/hearing change or memory problems with a syphilis history: urgent medical evaluation.

FOR CLINICIANS

- Look for sleep apnea (higher prevalence with opioids and HIV), restless legs, and drug- related insomnia before supplements.
- Offer CBT-I first; avoid sedative-hypnotics where possible.
- Review antiretroviral CNS effects (efavirenz) with the HIV team.
- Counsel on B6 toxicity, SAMe and mania, and serotonergic interactions.

KEY POINTS

- Insomnia in recovery is biological and temporary.
- Fixed wake time plus morning light is the strongest free tool.
- Infections and inflammation can drive insomnia; treat the infection first.
- CBT-I beats sleeping pills long term.
- Supplements are optional, **[Emerging]**, and need a clinician check.
- Never stop alcohol or sedatives suddenly.

Sexual Health and Infections in Recovery

> **In this chapter:** the main sexually transmitted infections (HIV, syphilis, gonorrhea, chlamydia, herpes, HPV, hepatitis) in plain terms: how to prevent them, what testing to ask for, and what to do after an exposure. It is non-judgmental by design. Shame delays testing and treatment, and untreated infections hurt recovery. US-centred.

Emergency box. After a possible HIV exposure (condom failure, unknown partner status, sexual assault, shared injection equipment), **go to an emergency department or urgent care right away**. HIV post-exposure medicine must start within 72 hours and works best the sooner it starts. Call 911 for severe symptoms or if a person is unsafe. Sexual assault: RAINN 1-800-656-4673. Crisis: 988; Crisis Text Line text HOME to 741741. SAMHSA: 1-800-662-4357.

Purpose

Intoxication lowers caution; early recovery can raise risk-seeking. Several infections are silent for years and then cause lasting harm, yet most are preventable, treatable or curable. The gap is usually access, not medicine. This chapter turns that into a plan.

The shared logic

- Most STIs have no symptoms. Feeling fine does not mean you are clear.
- Testing should cover every site of exposure (genital, rectal, throat). A urine test alone can miss infections.
- Treat partners too, or you will be reinfected.
- Some infections raise the risk of others (for example, ulcers and rectal infections increase HIV risk).
- Shame is a relapse risk. A calm, practical approach is the protection.

What to do (checklist)

- ☐ Get a baseline sexual-health panel from a clinician you trust: HIV, syphilis, gonorrhea and chlamydia at every exposed site, hepatitis A, B and C, and discuss herpes and HPV. Ask how often to repeat it; many guidelines advise every 3–6 months if you have multiple partners.
- ☐ Ask about vaccines: hepatitis A, hepatitis B, HPV (routine in youth, catch-up through age 26, and a shared decision for some older adults).
- ☐ Learn the HIV prevention options and pick what fits (below).
- ☐ Know the 72-hour rule for HIV post-exposure medicine and where your nearest emergency department is.
- ☐ Use condoms and barriers consistently. Use dental dams for oral-anal contact.
- ☐ Plan for sex while sober before the first time, including disclosure wording you are comfortable with.
- ☐ Never share needles, syringes, cookers, straws, or pipes.
- ☐ If chemsex substances (methamphetamine, GHB/GBL, mephedrone) are part of your story, see the chapter on chemsex and the 12 Safety Rules; these can erase your judgment and carry their own overdose and withdrawal dangers.

HIV

Prevention options.

- **PrEP** (pre-exposure prophylaxis): daily oral pills or a long-acting injection taken before exposure. Taken as prescribed, it cuts sexual HIV risk by more than 99% **[Established]**. It needs baseline and periodic kidney and HIV tests. Different PrEP products have different risks and monitoring; a prescriber chooses.
- **PEP** (post-exposure prophylaxis): a month-long medication course started within 72 hours of exposure, with follow-up testing **[Established]**.
- **U=U:** a person on HIV treatment with a sustained undetectable viral load does not transmit HIV sexually **[Established]**.
- **Condoms** reduce risk. “Pulling out” and cycle-timing are unreliable and not recommended as protection.
- **Treatment:** modern HIV treatment is highly effective and lets people live long lives.
- Ask whether injection use calls for sterile equipment through a syringe services program.

Syphilis

Syphilis has been rising in the US. Stages: a painless sore, a rash and flu-like illness, a silent period, and late disease that can damage the brain, nerves, eyes, ears and heart **[Established]**. Neurological and eye or ear involvement can occur at any stage.

- It is curable with penicillin; early syphilis is often treated with a single injection, and later stages need a longer course. Follow-up blood tests confirm the cure.
- If you have HIV and syphilis, a specialist should decide whether the nervous system needs evaluation.
- Don't wait for symptoms. A blood test finds it.

Gonorrhea and chlamydia

- Both are often silent, especially in the throat and rectum.
- Chlamydia is treated with an antibiotic course. Gonorrhea is becoming harder to treat as resistance grows, so complete the full treatment, follow up on retesting when advised, and have partners treated.
- Untreated, they can cause pelvic inflammatory disease, infertility, joint infection and raise HIV risk.
- Post-exposure doxycycline is an option some clinicians discuss for certain groups; it raises resistance concerns, so ask whether it fits you **[Emerging]**.

Herpes (HSV-1 and HSV-2)

- Very common. Most people with it have mild or no symptoms, and the stigma is out of proportion to the usual medical impact.
- Spread happens mostly when there are no visible sores. Daily suppressive medicine from a prescriber reduces outbreaks and lowers transmission. Condoms and disclosure reduce it further.
- No preventive vaccine exists yet.
- Shame is the main recovery risk. It can be treated like any other chronic condition.

HPV

- The most common STI. Most infections clear on their own. Some high-risk types cause cancers (cervical, anal, throat, genital) and some types cause warts **[Established]**.
- The vaccine prevents most infections from the types it covers when given before exposure. Ask a clinician whether it is still worthwhile if you are older.

- Screening matters: cervical screening, and anal screening for higher-risk groups (including people with HIV and men who have sex with men) where available.
- Quitting smoking helps the body clear HPV.

Hepatitis A, B and C

How it spreadsPreventionTreatment

Hepatitis AFecal-oral (food, VaccineSupportive care water, some sexual contact)

Hepatitis BBlood, semenVaccineAntivirals control it; can cause cirrhosis or liver cancer over decades if chronic

Hepatitis C	**Blood (shared drug equipment), sometimes sexual How it spreads**	**No vaccine; sterile equipment Prevention**	**Direct-acting antivirals cure the large majority of people in about 2–3 Treatment months [Established]**

Hepatitis C often goes undiagnosed. Ask for the test. Hepatitis C is now curable.

Pitfalls

- Waiting until you have symptoms.
- Testing at one site only.
- Believing “undetectable” or “clean” claims from a partner without verification.
- Using supplements or “immune boosters” instead of treatment.
- Skipping retesting after treatment.
- Letting shame stop you from telling a clinician your history.
- Believing a genetic profile or other framework can predict infection risk. Some Kernel material suggests this; it is a **[Kernel hypothesis]** with no established link.

When to get help

- Any exposure with possible HIV risk: emergency care now (within 72 hours).
- Sore, rash, discharge, burning, pelvic pain, fever, or yellow skin or eyes.
- Headache, vision or hearing change, or confusion with a syphilis history.
- After sexual assault: medical care and support.

- If sexual urges or behavior involve harming others, children, or non-consenting people, seek confidential professional help. For safety, call 988 or a local counselor; a legal consultation is also worth considering.

FOR CLINICIANS

- Offer opt-out, multisite, non-judgmental testing at intake and routinely thereafter.
- Check local resistance patterns and current guidelines for treatment; this handbook gives no regimens.
- Offer hepatitis A/B vaccination, HPV vaccination and PrEP/PEP pathways; link to substance treatment and syringe services.
- For HIV with syphilis, involve a specialist about neurosyphilis evaluation.
- Frame everything as health, not morality.

KEY POINTS

- Most STIs are silent. Test every exposed site.
- PrEP, PEP (within 72 hours), vaccines and U=U are powerful tools.
- Hepatitis C is curable; syphilis and chlamydia are curable; gonorrhea needs careful, completed treatment.
- Treat partners and retest.
- Shame is the real relapse risk; seek care without it.

Gut, Parasite and Other Infections That Can Mimic Recovery Symptoms

> **In this chapter:** infections that look like anxiety, depression or "not trying hard enough": giardia, cryptosporidium, EBV (mono), toxoplasma, and urinary tract infections (including a drug-safety warning on fluoroquinolone antibiotics). The aim is to ask for the right test.

Emergency box. Call 911 or go to an emergency department for severe dehydration (dizziness, very little urine, confusion), bloody diarrhea with fever, severe abdominal pain, fever with back or flank pain, sudden confusion or a seizure. People with HIV or other immune problems should seek care sooner. Crisis: 988.

Purpose

Persistent fatigue, bloating, diarrhea, brain fog and low mood are common in early recovery, and are often blamed on willpower. Sometimes there is a treatable infection underneath. Gut repair, supplements and probiotics cannot fix a gut that is being damaged by an active parasite.

What to do (checklist)

- ☐ If GI symptoms, unexplained fatigue or anxiety that doesn't respond to usual care last more than a couple of weeks, ask for infection testing before assuming it is "just recovery."
- ☐ Mention risk exposures to the clinician: untreated or camping water, travel, oral-anal contact, animal contact, undercooked meat, immune problems.
- ☐ Use safe water and hygiene (below).
- ☐ Treat the infection first; restart gut and nutrition work after.
- ☐ If you have HIV, keep your viral load suppressed; it is the main protection against severe parasitic disease.

The infections

Giardia

- Causes bloating, cramps, intermittent diarrhea, fatigue, malabsorption. Symptoms overlap with anxiety, IBS and early recovery, so it can go undetected for months.
- Spread by contaminated water or food, and by oral-anal contact.
- A stool antigen or PCR test finds it. It is treatable with prescription antimicrobials; resistance to some drugs exists.

Cryptosporidium

- Usually causes a week or two of watery diarrhea in healthy adults. In people with advanced HIV or other immune problems it can become chronic and dangerous.
- Resistant to chlorine, so filtering or boiling matters. Spread by water, food, animals and oral-anal contact.
- Treatment is limited; keeping the immune system strong (including effective HIV treatment) is central.

Epstein-Barr virus (mono) and long fatigue

- Most adults carry EBV. Primary infection can cause weeks to months of exhaustion, sore throat, swollen nodes, fever.
- Fatigue from mono or a reactivation is easily mistaken for depression or lack of effort. Ask for a clinical evaluation if fatigue is disproportionate or comes with fever, swollen glands or sore throat.
- Care is supportive: fluids, rest, fever and pain relief as advised. Avoid contact sports and heavy lifting for several weeks (spleen rupture risk) until a clinician clears you.
- Seek care for severe left-upper abdominal pain, breathing difficulty, jaundice or severe headache.

Toxoplasma

- Roughly a third of people carry a dormant infection. Healthy adults usually have no symptoms.
- Studies link it with psychiatric conditions and risk-taking, but these are correlations **[Emerging]**. They do not show that it is causing your symptoms, and there is no routine treatment for the dormant form.
- It matters for pregnancy and for people with weakened immune systems. Cook meat thoroughly, wash produce and hands, and use gloves for soil and cat litter (avoid litter in pregnancy or when immunocompromised).
- Testing may be reasonable in treatment-resistant psychiatric illness or immune compromise; a clinician decides.

Urinary tract infections (UTIs)

- Common and curable. Symptoms: burning, frequency, urgency, blood in urine; fever and back or flank pain suggest a kidney infection and need prompt care.
- Resistance to some antibiotics is rising. Ask for a urine culture to choose the drug when symptoms are recurrent or complicated.
- **Fluoroquinolones (ciprofloxacin, levofloxacin)** carry FDA boxed warnings for serious side effects, including tendon, nerve and central nervous system effects (anxiety, insomnia, confusion, rarely psychosis) **[Established]**. They are usually not the first choice for simple UTIs. Tell the prescriber about your mental-health history and other medicines, and report new anxiety, confusion or tendon pain at once.
- Hydration, urinating after sex, and barriers reduce risk. Cranberry and D-mannose have mixed evidence **[Emerging]**.

Safe-water and hygiene basics

- Filter or boil questionable water. Wash produce. Avoid raw shellfish and unpasteurized dairy.
- Wash hands after toilet, diapers, animals, and before eating.
- Use dental dams for oral-anal contact.

Pitfalls

- Blaming symptoms on anxiety or relapse risk without testing.
- Piling on supplements while symptoms persist.
- Treating yourself with leftover or online antibiotics.
- Returning to full exercise after mono too early.
- Assuming a toxoplasma positive result explains your mind. It usually doesn't.

When to get help

See above emergency box, plus: diarrhea beyond 1–2 weeks, weight loss, fever, symptoms that return after treatment, or any infection with HIV, chemotherapy, steroids or other immune suppression.

> **FOR CLINICIANS**
>
> - Add giardia and cryptosporidium to the differential for chronic GI symptoms, especially with immune compromise or high-risk exposure.

- Use cultures for recurrent UTI; avoid fluoroquinolones when alternatives exist; document psychiatric history.
- Don’t attribute persistent psychiatric symptoms to latent toxoplasma without strong evidence.
- Use standard guidelines for therapy; this chapter gives no regimens.

KEY POINTS

- Persistent gut symptoms and fatigue deserve testing, not blame.
- Treat parasites before gut-repair projects.
- Mono fatigue is real; protect the spleen.
- Toxoplasma associations are correlations.
- Fluoroquinolones carry real neuropsychiatric warnings.

Co-occurring Psychiatric and Neurological Conditions

In this chapter: four conditions that travel with addiction and change what is safe to do: psychosis and schizophrenia-spectrum illness, bipolar disorder, Wernicke's encephalopathy (a brain emergency linked to alcohol), and suicidality. Gene-related ideas are labeled hypotheses. This chapter is information to bring to a prescriber, not self-treatment. US-centred. **Emergency box. Suicidal thoughts or a plan: call or text 988; if in immediate danger, call 911.** Crisis Text Line: text HOME to 741741. SAMHSA: 1-800-662-4357. Call 911 or go to the ED for confusion, unsteady walking or abnormal eye movements in someone who drinks heavily or is malnourished (a possible Wernicke's emergency), for hallucinations or paranoia with danger to self or others, or for severe agitation.

Purpose

Treating addiction without noticing these conditions can cause harm: antidepressants given to someone with undiagnosed bipolar disorder can trigger mania; supplements can worsen psychosis; missing thiamine deficiency can cause permanent memory loss. Know what to ask.

Psychosis and schizophrenia-spectrum conditions

What it is. Hallucinations, delusions, disorganized thinking, withdrawal, and thinking difficulties. Substance-induced psychosis (stimulants, cannabis, synthetic cannabinoids, hallucinogens, dissociatives) can resemble it and sometimes becomes a lasting illness. Genetics, trauma, cannabis and other factors all contribute.

What to do.

- Psychosis needs psychiatric care. Early specialist treatment improves outcomes. Cannabis and stimulants make it worse.
- Antipsychotics, psychotherapy (including CBT for psychosis), family psychoeducation and supported work/education are standard.
- Do not use dopamine-raising supplements (tyrosine, stimulating "brain stacks", rhodiola and similar) while psychotic symptoms are active; wait for psychiatric clearance.
- Some medicines raise prolactin, affecting sexual function; tell your prescriber so alternatives can be considered.

- Smoking cessation can raise levels of clozapine, olanzapine and theophylline; coordinate a quit plan with the prescriber.

Kernel framework (labeled). The Kernel links a slow-COMT and low-methylation profile to dopamine overload **[Kernel hypothesis]**. No single gene causes schizophrenia **[Established]**; it is highly polygenic. A methylfolate add-on to antipsychotics has some supporting research **[Emerging]**; a psychiatrist decides.

Bipolar disorder

Why it matters. It is often missed for years and mistaken for depression, ADHD or "just addiction."

- Antidepressants and stimulants can trigger mania or mixed states in bipolar disorder.
- Supplements such as SAMe, and sometimes high-dose B vitamins and other activating products, can precipitate mania in predisposed people. Tell your prescriber about every supplement.
- Mood stabilizers are specific; some interact with other drugs and need blood monitoring.

Clues to mention to a clinician: past periods of very little sleep with high energy, racing thoughts, risky spending or sex, grandiosity; family history of bipolar disorder; depression that gets worse or "wired" on an antidepressant.

Pharmacogenomics (labeled). Tests may inform dosing of some drugs **[Established for specific drug–gene pairs]**; Kernel claims linking MTHFR/COMT to bipolar risk are **[Kernel hypothesis]**.

Wernicke's encephalopathy (thiamine deficiency)

- A medical emergency caused by severe thiamine (vitamin B1) deficiency. Heavy drinking impairs absorption, storage and raises needs; poor diet adds to it. Other causes include severe vomiting, eating disorders and some weight-loss surgery.
- **Warning signs:** confusion, unsteady gait or loss of coordination, abnormal eye movements. The full set appears in only a minority of cases, so any one of these in a person at risk deserves urgent evaluation.
- Treated early with high-dose intravenous thiamine in a hospital, it is often reversible. Missed, it can progress to Wernicke–Korsakoff syndrome, with permanent memory loss.
- **Prevention:** adequate food and a thiamine supplement for people at risk. Ask your clinician or pharmacist about the form and amount.
- Tell emergency staff: "heavy alcohol use; possible Wernicke's; please give thiamine." This is an ED/hospital treatment, not home care.
- Alcohol withdrawal itself needs medical supervision (see the 12 Safety Rules).

Suicidality

Suicidal thoughts are a medical risk in recovery, especially after losses, relapse, shame, isolation, new diagnoses, or sudden sobriety.

What to do (checklist)

- ☐ Write a safety plan while you are well: warning signs, coping steps, people to call, safe places, 988, and the nearest ED.
- ☐ Reduce access to means: store firearms away or off-site, limit stockpiles of medicines and alcohol.
- ☐ Tell at least one person your warning signs.
- ☐ Ask directly if someone you care about may be suicidal. Asking does not plant the idea.
- ☐ Don't be alone with intense thoughts: call or text 988, go to an ED, or call 911.
- ☐ Tell your prescriber about suicidal thoughts, especially after starting or changing a medicine.

Genetics (labeled). Large studies have found many genetic variants linked to suicide attempts, each with a very small effect. They cannot predict who will attempt suicide **[Established]**. A "Worrier" gene profile is not a diagnosis. The Kernel's "withstand power" idea (building resilience before a crisis) is a **[Kernel hypothesis]**; the practical version is the safety plan above. Do not try to relieve loneliness by creating conflict or "switching stressors"; reach for safe contact instead.

Pitfalls

- Treating symptoms with supplements before ruling out psychosis or bipolar disorder.
- Starting antidepressants or stimulants without screening for mania history.
- Assuming that confusion in a heavy drinker is "just intoxication."
- Waiting for suicidal thoughts to pass alone.
- Believing a gene test explains or predicts your mind.

When to get help

Use the emergency box above. Also: 2 or more days of near-no sleep with high energy; hearing or seeing things; paranoia; new memory problems; thoughts that life isn't worth living.

> **FOR CLINICIANS**
>
> - Screen for bipolar disorder (including family history) before antidepressants or stimulants.

- Treat first-episode psychosis as a specialist matter; ask about cannabis and stimulants.
- Give parenteral thiamine early when Wernicke’s is possible, before glucose.
- Use structured suicide risk assessment and safety planning; address means safety.
- Methylfolate augmentation is a prescriber decision with limited evidence.

KEY POINTS

- Psychosis and bipolar disorder change what is safe: no activating supplements, careful medication choices.
- Wernicke’s is an emergency. Confusion, unsteadiness or eye changes in a heavy drinker means the ED.
- Genes do not predict suicide. A safety plan does help.
- 988 is open now. Use it.

Genetics, Tests and Temperament: What the Kernel Proposes

In this chapter: the Kernel's "phenotype-directed" idea (that your genes and temperament shape which substances appealed to you and which tools suit you), what part of that is standard pharmacogenomics, and what remains a hypothesis. A practical, test-free version is included. **Never delay starting treatment while waiting for a test. Emergency box.** A genetic result never changes first aid. Overdose: **naloxone and 911**; naloxone does not reverse xylazine or medetomidine, and nitazene overdoses may need repeated naloxone doses, so always call 911 and start rescue breathing. Alcohol, benzodiazepine, Z-drug, GHB or high-dose gabapentinoid withdrawal: medical supervision, never sudden stopping. Suicidal crisis: 988.

Purpose

People respond very differently to the same drug and the same program. Genes are one real part of that, but a small and often misunderstood one. This chapter separates what is established from what is speculation, so that no one feels doomed by a result or reassured by one.

What is established, emerging, and hypothesis

Marker or idea	The Kernel's claim	Evidence status
CYP2D6, CYP2C19, CYP2C9, CYP2B6, CYP3A4/5 (drug-metabolizing enzymes)	Variants change how fast you clear medicines such as codeine, tramadol, some antidepressants, benzodiazepines, efavirenz	**[Established]** for specific drug–gene pairs (clinical guidelines exist, for example for codeine, tramadol and several antidepressants). Kernel claims about overdose risk or "dissociative logjam" with ketamine are **[Kernel hypothesis]**
Phenoconversion	Inflammation or infection can **[Established]** as a concept make a normal metabolizer act like a slow one	(inflammation and some drugs suppress enzymes). Use clinical judgment

Marker or idea	The Kernel's claim	Evidence status
ALDH2 (alcohol flushing)	Variant causes toxic acetaldehyde build-up and flushing; drinking raises cancer risk	[Established]; common in people of East Asian ancestry
MTHFR (folate)	Reduces methylation, depletes dopamine/serotonin, worsens detox	Common variant; most major genetics bodies advise against routine testing for most purposes. Links to craving, sleep or mood are **[Kernel hypothesis]/**[Emerging]
COMT Val158Met ("Warrior" vs "Sage/Worrier") Marker or idea	Fast clearance means under-stimulation and stimulant/novelty seeking; slow clearance means The Kernel's claim anxiety/rumination and depressant seeking	[Emerging]**, mixed results.** A useful metaphor for temperament, not a reliable test Evidence status
SLC6A4 (5-HTTLPR)	"Short/short" means high limbic reactivity	[Emerging], repeatedly disputed
MAOA	"Warrior gene" mood-spike or aggression risk	[Emerging], weak. Don't use for blame or labeling
OPRM1 A118G	Reduced opioid binding; better naltrexone response	[Emerging], inconsistent
GABRA2	Less inhibitory tone, higher alcohol risk and withdrawal-seizure risk	[Emerging] for alcohol risk. Withdrawal seizure risk is a **clinical history**, not a genotype call
FAAH	Elevated anandamide, sleep and cannabis effects	[Emerging]
HNMT	Slow histamine clearance means sensory overload	[Kernel hypothesis]
Genotype → "addiction type"	A genotype predicts which substance you chose or your personality	[Kernel hypothesis]**.** Not fact

Population percentages and "% reduced activity" figures in the source material are approximations; do not quote them as individual predictions.

What to do (checklist)

- ☐ Start treatment now. Medications, therapy, community and sleep don't wait for genes.

- ☐ If you take or may start psychiatric, pain, or HIV medicines, ask your prescriber or pharmacist whether **clinical pharmacogenomic testing** would change a choice. Ask for results to be put in your record.
- ☐ If you already have raw data from a consumer DNA test, bring it to a clinician or genetic counselor. Consumer data can miss important variants and can't be used alone to set doses.
- ☐ Choose a lab and a clinician, not a chatbot. Raw genome files are identifying even after names are removed. Don't upload them to general-purpose AI tools; AI tools can invent results.
- ☐ Understand privacy: US law (GINA) bars genetic discrimination in health insurance and employment, but not in life, disability or long-term care insurance.
- ☐ If you cannot test, use the **no-test version** below: watch how you actually respond.

The no-test version: notice your patterns

The Kernel suggests looking at observable traits. Treat these as questions, not labels **[Kernel hypothesis]**.

Pattern	Possible meaning	Practical response
Bored and flat without challenge; stimulants appealed; thrives on deadlines	Understimulated profile ("Warrior")	Plan structured challenge: hard exercise, skill-building, meaningful work with limits; block gambling/trading/betting apps early; guard against swapping one compulsion for another (addiction transfer)
Overwhelmed by noise and stimulation; depressants appealed; caffeine makes you anxious; slow to calm down	Over-aroused profile ("Sage") Body-first calming (cold	water on the face, slow exhale, movement), quiet low-stimulus environment, structured downtime, less caffeine, contemplative or group formats
Severe or unexpected drug reactions (no effect from codeine, extreme sedation from a standard dose)	Possible metabolism difference	Tell your prescriber; consider clinical testing
Chronic "something missing", impulsivity across areas, ADHD-like traits	Reward-deficiency pattern	Assess for ADHD and depression; build dopamine-friendly routines (exercise, play, novelty, community)

Trying a "methylfolate and B12 trial" because of symptoms is something to discuss with your clinician (not a self-experiment), especially with bipolar disorder or on psychiatric medicines.

Adapting the toolkit (labeled hypotheses)

Situation	Adaptation
High reactivity or sensory sensitivity	Prioritize body-based calming before talking yourself down; strip noise and bright light during crisis; choose smaller, calmer support formats
Impulsivity under craving Situation	Don't rely on willpower in the moment: pre-set "if-then" plans, structural barriers (blockers, a trusted holder for money, locked- Adaptation box for phone), replacement routines
Anger plus high-energy music	Aggressive music can feed agitation. Matching your mood first and then gradually calming it ("meet, then lead") is a reasonable approach
Sleep fragile	Evening wind-down, cool dark room; see the sleep chapter
Meeting culture feels wrong	Other formats (SMART, Dharma, LifeRing, secular and nature-based) exist; the active ingredients are connection, structure, accountability and ritual
Boredom ("peacetime paradox")	Constructive intensity with limits: sport, craft, learning, service; add a "governor" (clear start and end) so intensity doesn't become workaholism
Pain care	If opioids become unavoidable: external medication control, full disclosure and an exit plan before the first dose

Claims that sounds and binaural beats, or specific frequencies, restore brain function are **[Emerging]** at best; use them for relaxation if you like them, not as treatment.

Infection and genes

Some infections and their treatments (HIV, chronic viral infections) can change how drugs are processed. Never start, stop or change antiretroviral medicines without the prescribing clinician; testing of specific enzyme genes can be part of that conversation. Viral latency "using up methylation resources" is a **[Kernel hypothesis]**; methylfolate is not a treatment for any infection.

Pitfalls

- Using a gene result as an excuse ("it's my biology") or as a sentence ("I'm doomed").

- Delaying treatment while waiting for a test.
- Adjusting doses of any medicine based on a chatbot reading of raw data.
- Taking “methylation” supplements on top of antidepressants, antipsychotics or in bipolar disorder without a prescriber.
- Believing temperament types are fixed or fully genetic.
- Using results to justify avoiding meetings, medications, or help.

When to get help

- Unusual drug side effects or no effect at normal doses: prescriber or pharmacist.
- Severe agitation, aggression, mood spikes or hallucinations on a stimulant or any drug: ED/911.
- Any confusion over what a result means: genetic counselor.

FOR CLINICIANS

- Use CPIC-type guidance for established drug–gene pairs; document phenoconversion in inflamed or polypharmacy patients.
- Do not use COMT, MAOA, SLC6A4, HNMT or MTHFR results to assign “addiction types” or to withhold treatment.
- Avoid routine MTHFR testing; consider folate status and clinical features instead.
- Counsel on privacy, GINA limits, and the limits of consumer arrays versus clinical testing.
- Avoid uploading genomic data to non-clinical AI tools.

KEY POINTS

- Start treatment now; never wait for a gene test.
- Drug-metabolism genes are useful for specific medicines; most “personality” gene claims are hypotheses.
- Your own response history is evidence too.
- Keep genomic data away from consumer AI tools.
- Genes inform choices; they don’t predict outcomes or assign blame.

Screens, Feeds and the Digital Environment

> **In this chapter:** how phones, feeds and comment sections can pull on the same reward circuits as substances, what that means in early recovery, and a practical plan for taking the feed out of the driver's seat. The research claims are a mix; labels show which. This is not an argument for digital abstinence.

Emergency box. If online content, a scam, harassment, or extortion is pushing you toward self-harm or relapse: call or text **988**, text HOME to **741741**, or call **911** if in danger. Gambling or financial crisis: 988 and the National Problem Gambling Helpline 1-800-GAMBLER. SAMHSA: 1-800-662-4357.

Purpose

Many platforms are designed to maximize attention using unpredictable rewards, endless scrolling and social comparison **[Established]** in design, with the strength of harm to individuals varying **[Emerging]**. A person with a flat or hyper-reactive reward system is more exposed. The "self-help trap" is also real: quitting a substance and then scrolling recovery content for hours.

What to do (checklist)

- ☐ Audit one week of screen time. Note what you use at night, on waking, and when stressed or craving.
- ☐ Remove the highest-pull apps for the first few days (delete, don't just hide). Turn off non-human notifications.
- ☐ Charge the phone outside the bedroom. Use a regular alarm clock.
- ☐ Set "no-phone" windows: first hour after waking and last hour before sleep. Use a timer or lockbox if willpower fails.
- ☐ Replace, don't just remove: music, a walk, a call, reading, a hobby, a meeting.
- ☐ Choose a few trusted recovery sources and mute the rest. Avoid arguing in comment sections.
- ☐ Prune follows; add long-form and local sources. Review your feed every few months.

- ☐ Use a blocker for gambling, trading, betting and adult content if these are risks (see the chapters on behavioral addictions).
- ☐ Protect privacy: limit location sharing, tighten account security, and be wary of anyone selling cures, supplements, peptides, crypto or "recovery coaching" online.
- ☐ Rebuild face-to-face contact weekly: a coffee, a group, a class, a walk.

Specific hazards in recovery

- **Variable rewards and scrolling.** Unpredictable payoff keeps you checking. Cravings can be dulled by scrolling and then return stronger.
- **Late-night screen time.** Bright light and arousing content worsen sleep (see the sleep chapter).
- **Comparison and outrage.** Highlight reels and conflict raise anxiety and shame.
- **Misinformation.** Fake cures, supplements, and detox products are heavily marketed, and sellers use health or recovery identity for targeting.
- **Scams and exploitation.** Crypto, pyramid and "recovery" scams target people who are desperate or isolated.
- **Isolation.** Online company can replace in-person ties. Parasocial relationships feel real but are one-sided.
- **Distressing content.** Graphic violence or abuse content can trigger trauma symptoms. Mute, block, and step away.
- **Dealers and using networks online.** Mute or block contacts and groups tied to use.

Some of the Kernel's claims on this topic (for example, specific effects of ultra-high-definition video, or lists of "100 risks") are broad assertions without clear sources. Treat them as a **[Kernel hypothesis]**; the practical steps above do not depend on them.

Age and life stage

The pull and the harm differ: younger people have developing impulse control and sleep needs; midlife is about work, family, money and parenting; later life is more about isolation, scams and misinformation. Whatever your age, the plan is the same: protect sleep, protect face-to-face contact, protect money.

A two-week starter plan

Week	Do
1	Audit. Delete one high-pull app. Replace one scroll block with a walk or music. Write a one-page weekly reflection.
2	Add two long-form reading or listening blocks. Schedule one in-person meetup. Mute noisy notifications. Phone out of the bedroom; screens off 45 minutes before sleep.

Pitfalls

- Deleting apps and replacing them with another scroll.
- Using recovery forums as your only support.
- Making blocks so strict you give up in a week.
- Treating a lapse in screen use as failure; it is information (see the 12 Safety Rules).
- Believing online “experts” over your clinicians.

When to get help

- You can’t stop despite harm to sleep, work, money, or relationships.
- Gambling or spending debt, or sexual/online compulsions you can’t control.
- Online harassment, threats, extortion, or being targeted for exploitation.
- Anxiety, panic, or hopelessness tied to use of social media.

FOR CLINICIANS

- Ask about screen use, gambling-like features, late-night use and money as part of relapse prevention.
- Use concrete environment design (device zoning, blockers) rather than willpower talk.
- Be sparing with strong causal claims about screens; the evidence for individual harm is mixed.

KEY POINTS

- Feeds are built to hold attention. Design your environment; don’t rely on willpower.

- Protect the first and last hour of the day.
- Replace scrolling with something real.
- Be wary of online cures, supplements and scams.
- Rebuild in-person contact weekly.

How the Epidemic Was Built: History and the System Around You

> **In this chapter:** a short, practical history of how addiction, treatment, and drug policy got to where they are, why that matters for your recovery, and the questions to ask any treatment program. It is context, not an excuse and not a conspiracy theory. Some details are the Kernel's interpretation and are labeled. US-centred.

Emergency box. None of this history changes what to do in a crisis. Overdose: 911 and naloxone. Suicidal thoughts: 988. SAMHSA: 1-800-662-4357. Poison Control: 1- 800-222-1222.

Purpose

Most people in recovery were told, in effect, that addiction is a personal failing or a personal disease. Biology and choice both matter. But your addiction also grew inside a system of marketing, regulation, policy, and treatment that did not always serve your health. Knowing that can lower shame and help you choose care wisely. The work of recovery is still yours; understanding the ground does not stand in for it.

The pattern: a "cure" that became the next crisis

Era	What happened
1800s	Opium tonics (laudanum), cocaine tonics and coca wine sold as remedies; morphine promoted as a "cure" for alcohol or opium dependence
Late 1800s–early 1900s	Heroin was marketed by a pharmaceutical company as a safer cough remedy and alternative to morphine; cocaine appeared in tonics and soft drinks until 1903
1930s–60s	Amphetamines sold widely as "pep pills"; barbiturates prescribed freely, then replaced by benzodiazepines described as safer

Era	What happened
1950s–70s	Valium became among the most prescribed drugs in the world; dependence widely unrecognized
1980s–90s	The crack epidemic met harsh sentencing (a 100:1 powder-to-crack disparity, later reduced) and little treatment
1996 onward Era	OxyContin was launched with claims of low addiction risk; heavy promotion to doctors followed. Court records showed that the What happened manufacturer knew more than it disclosed; settlements and convictions followed
2010s onward	As prescriptions tightened, supply shifted to heroin and then illicit fentanyl, now often mixed with other agents. See the Handbook for current adulterant warnings (xylazine, medetomidine, nitazenes)

The consistent theme is a new product promoted as non-addictive, followed by a larger harm **[Established]** in outline. Some details in popular retellings are simplified or contested. Treat dates and figures as approximate and check a current source before quoting them.

Other threads worth knowing

- **Pain and prescribing.** In the 1990s, campaigns (some funded by drug makers) pushed pain treatment as a priority, which helped create the setting for mass opioid prescribing. Doctors were responding to real undertreated pain; most were not corrupt.
- **Class and race in the response.** Similar epidemics met different responses: heavy criminal penalties in some communities and public-health responses in others. Drug laws also have roots in racial panic. This is well documented **[Established]**.
- **Social Darwinism.** The old idea that addiction means weak character persists in policy, workplaces and families. Modern science does not support it.
- **Alcohol and the heaviest drinkers.** A large share of alcohol sales goes to the heaviest drinkers, so the industry's incentives do not line up with reducing dependence **[Emerging]** in how strongly it is stated.
- **Treatment as an industry.** The treatment sector is large, mixed in quality and weakly regulated in many places. The 28-day residential model reportedly arose partly from insurance coverage rather than outcome evidence **[Emerging]**. Cycling through repeated stays is often treated as an individual failure, even when care lacked medication, co- occurring care, or aftercare.
- **AA's origins.** Alcoholics Anonymous began in 1935, shaped by the Oxford Group and by the legal and social stigma of its time. Anonymity protected members' livelihoods. The claim that anonymity was

mainly a legal-protection device is a **[Kernel hypothesis]**; many historians also emphasize spiritual and organizational reasons. The model fits some people very well and others less well. Its active ingredients (connection, structure, accountability, ritual) can be found in many formats.

What to do (checklist)

- ☐ Use this knowledge to lower shame, not to lower effort. Understanding the system is context, not absolution.
- ☐ When choosing a program, ask:
  - oDo you offer or support medicines for opioid, alcohol or tobacco use disorder? (Programs that refuse them are not following current evidence.)
  - oDo you assess and treat co-occurring conditions (depression, anxiety, trauma, ADHD, bipolar, psychosis)?
  - oWhat is the plan after discharge: aftercare, step-down, peer support, housing, work?
  - oWhat are your outcomes, and how do you track them? What do you do about relapse?
  - oWho is licensed, who supervises, and what are the costs and what does insurance cover?
- ☐ If you've been through several programs, ask what was missing (medication, length, aftercare, co-occurring care), not only "what was wrong with me."
- ☐ Find a format that fits you: 12-step, SMART, Dharma, LifeRing, secular, faith-based, peer recovery coaching, therapy.
- ☐ Use verified, trustworthy sources for medicines; distrust of industry is not a reason to refuse medicines that work.

Pitfalls

- Using the history as a reason to quit treatment, refuse medicine, or blame everyone else.
- Conspiracy thinking: documented corporate misconduct is real, but not every claim online is.
- Treating a relapse after a program as proof you failed rather than asking whether the program was fit for you.
- Quoting dramatic numbers from the source text without checking.
- Letting anger replace action.

When to get help

- Anger, shame or hopelessness about your past that is driving use or suicidal thoughts: 988, a therapist or a peer group.
- Pressure from a program to stop prescribed medicines against medical advice: second opinion from an addiction physician.
- Legal or insurance barriers to treatment: ask a patient advocate or local legal-aid service.

FOR CLINICIANS

- Counter self-blame: relapse is information about the treatment plan, not only about motivation.
- Offer medication and co-occurring care as standard; document aftercare.
- Be transparent about program outcomes and costs.
- Acknowledge the role of stigma and unequal enforcement in patient mistrust.

KEY POINTS

- Each “cure” that was sold as non-addictive created a new crisis.
- Systems, markets and policy shaped the epidemic; they don’t remove personal responsibility for recovery.
- Ask programs hard, practical questions.
- Medicines that work are worth using, whatever you think of industry.
- Understanding the system can reduce shame. It cannot do the daily work for you.

Closing note and where to get help

If you are reading this in a jail, shelter, halfway house or hospital: recovery is possible, and standard approaches fail many people for reasons that are not laziness. Find a clinician who will work with you, a pharmacist who takes the time, and one person who will read this with you.

- **988 Suicide & Crisis Lifeline:** call or text 988
- **Crisis Text Line:** text HOME to 741741
- **SAMHSA National Helpline:** 1-800-662-4357 (free, confidential, 24/7)
- **Poison Control:** 1-800-222-1222
- **Emergency:** 911

- **Naloxone** is available without a prescription at most US pharmacies. It does not reverse xylazine or medetomidine; call 911 anyway.

Outside the US, use your local emergency number and crisis lines.

PART E. GROUP TOOLKIT FOR FACILITATORS

> **In this chapter.** A practical kit for running a Kernel group: how to run a session, an activity library you can pick from in two minutes, a monthly creative session, psychodrama and script work (with safety rules), and movement and dance. You do not need a clinical credential for the first three parts. Psychodrama needs more than goodwill, so Chapter 4 explains when to bring in a trained clinician.

US-centred. Crisis resources: 911 for emergencies; 988 (call or text); Poison Control 1-800-222- 1222; SAMHSA 1-800-662-4357; Crisis Text Line, text HOME to 741741.

A note on evidence. The source materials explain why each exercise "works" in neurochemical terms (dopamine, oxytocin, vagal tone, and so on). Those explanations are plausible but mostly not measured in groups like yours. In this chapter, treat them as **[Kernel hypothesis]**. What is well supported **[Established]** is simpler: movement, shared laughter, structure, being greeted by name and feeling safe in a room all help people stay engaged in recovery. Choose activities for those practical reasons.

1. Running a session

1.1 Is this group right for you?

The Kernel format suits groups where:

- people found conventional approaches a poor fit, or distrust religious or testimony- based formats;
- some members read little, or have never been in a group (nothing in the core format requires reading);
- you want a shame-reducing, biology-first frame;
- harm reduction is an accepted goal, so people who are still using are welcome.

It is **not** the right main resource when:

Situation	Do this instead
Someone is in alcohol or benzodiazepine withdrawal, or has had a seizure or hallucinations	Emergency medical care first. Withdrawal from these can be fatal and needs medical supervision. Call 911 if unsure.
Active psychosis or severe psychiatric instability	Psychiatric care first. Bring them back once stable.

Situation	Do this instead
The group has no trust yet	Run the standard meeting and light activities. Hold deeper work (Chapter 4) until trust exists.
You are in crisis yourself	Ask someone else to lead, or run a short, light session.
The space is unsafe (for movement or emotionally)	Change the space or the plan.
1.2 The facilitator role	

You need: familiarity with this chapter, the ability to keep time without rigidity, willingness to be honest about your own experience when it helps the group, and the judgment to stop something. You do not fix people. You set up conditions where people can try something and be seen. Lived experience is an asset. If you are in recovery yourself, keep your own supports in place.

Know your limits. If someone discloses abuse, suicidal thoughts, or a medical emergency, you are not their therapist. Stay with them, call 988 or 911 as needed, and link them to care.

1.3 Standard meeting, 60-70 minutes

Phase	What happens	Time
1. Opening	Water, a few slow breaths, purpose statement, one rotating opening sentence	~8 min
2. Introduction ritual	Every person: name, type, thrills of choice, what I'm working on (section 1.4)	15-20 min
3. Topic session	One handbook topic in plain language, plus one activity from Chapter 2	25-30 min
4. Close	Each person names one thing they will do before next time; closing words (section 1.5)	8-10 min

Purpose statement (suggested). "You are not broken. You are here to understand how your brain and body work, and to build something that holds." Say it in call-and-response if your group likes that.

1.4 The introduction ritual

Every person, every meeting, four sentences. Under 60 seconds each. It replaces "Hi, I'm Bob, I'm an addict" with a forward-facing format: where I am wired, what I'm using for energy now, and the one thing I'm working on.

Sentence	Group replies
"My name is ___."	"___. Good to have you here."
"I am a ___." (type, below)	A type-specific reply (below)
"My thrills of choice include ___." (safer sources of excitement or reward)	"That's the real thing."
"Right now I'm working on ___." (one forward-facing thing)	"We'll work on it with you."

Types and replies. The Kernel uses brain-type shorthand. Genotype labels are in brackets for clinicians. They are **[Kernel hypothesis]**: a person's type is a self-description, never a diagnosis, and it must never be treated as proof of a genotype or of an addiction type. Nobody should be asked for genetic results.

Type	Short description	Group reply
Warrior [Val/Val COMT]	Needs intensity and stakes; calm can feel flat	"Channel it."

Sage [Met/Met COMT]; older Runs hot under stress; needs "We've got you."

Type	Short description	Group reply
materials say "Worrier"	calm, rhythm, precision	
Warrior-Sage [Val/Met]	Range; both styles	"You've got range."
MTHFR [methylation variant] Chronic low energy or flat	mood; needs restoration	"We're rebuilding with you."
Depleted Sage [MTHFR + Met/Met]	Both strains	"We go slow and we go together."
Understimulated Warrior [MTHFR + Val/Val]	Low energy and fast-clearing	"We'll find you a real mountain."
"I don't know my type yet"	Completely valid	"You will. We'll figure it out together."

Most people self-identify within two or three meetings just from hearing others. Offer the Type Card (below) and, later, the phenotype assessment in the handbook. Never require either. Skip genetics vocabulary until meeting 3 or later; use plain words until the group asks.

Type Card (print one per person). Check the one that fits, or a mix:

- **Warrior:** need intensity to feel alive; calm feels wrong or boring; do well under acute stress; need competition, novelty, stakes.

- **Sage:** brain runs hot under stress; think deeply but can get stuck; need calm to function; need rhythm, precision, safety.
- **MTHFR / depleted:** chronic low energy or flat mood; substances once made you feel "normal"; need restoration, not more output.
- **Not sure yet:** just say so.

Thrills of choice (examples to draw on). Warrior: lifting, martial arts, sprinting, competitive games, climbing, cold water, heavy music. Sage: running, yoga, swimming, music practice, cooking, gardening, puzzles, writing, nature walks. Depleted: forest walks, gentle cycling, stretching, slow cooking, journaling. Anyone: coffee, live music, hiking, creative projects, volunteering, time with animals, people who make you feel alive. For anyone with caffeine- sensitive anxiety or sleep trouble, check with a clinician before leaning on stimulants.

If it goes wrong

Situation	What to say or do
A full testimony instead of four sentences	"Hold that. We'll have space for the whole story. Right now just the four sentences."
Someone says "I'm an addict"	Let it stand. Some people find that identity useful. Offer the type language if they want it. Do not police words.
Someone gets emotional Situation	Wait. The group holds the silence. They continue or pass. What to say or do
Someone declines	"Completely fine. You can observe." Offer once more at the end, gently.
A very long thrills list	"That's the real thing." Privately: "Pick your top two or three so the pace holds."
"I don't have thrills yet"	"That's the real thing." Ask: "What did you love before the substance took over?"
1.5 Closing words	

Say the closing words together, even if the first time feels awkward:

The biology can be understood better than we were told. The pattern can be changed. The work is real and the work is worth doing. Come back.

"Better than we were told" is deliberate: it admits understanding is incomplete, and names how many members were failed by systems that claimed to have all the answers. The tone throughout is invitation, not certainty. When speaking about the science, prefer "associated with meaningful improvement for many people, individual response varies" over "this will work", and "high priority, worth discussing with your clinician" over "not optional".

1.6 Answering “is this proven?”

Pushback is engagement, not a threat. Use the labels from the handbook:

Label	Plain meaning
[Established]	Widely accepted clinical fact (for example, alcohol and benzodiazepine withdrawal can cause seizures; exercise helps mood).
[Emerging]	Plausible, limited or mixed evidence.
[Kernel hypothesis]	The Kernel’s own framework. Not trial-tested.

A good answer: “Fair question. That one is Emerging: early signals, no large trials yet. Bring it to your clinician as a question.”

1.7 First meeting checklist

Before people arrive

- ☐ Read this chapter once, including the safety sections.
- ☐ Print the Type Card and a participant card with a space for “my one thing” (a few extra).
- ☐ Water available. Notebook and pen.
- ☐ Choose one opening sentence and one activity (Breath Sync for an anxious room, Name Toss for a flat one).
- ☐ Put 988 and local emergency numbers where people can see them.
- ☐ Check the room: exits, space to move, quiet corner for anyone who needs a break.
- ☐ Decide who is the second adult in the room (for someone who needs to step out).

Three things that must happen: everyone speaks at least once (even if only their name); the closing words are said aloud; everyone leaves with something concrete (their “one thing” card, a topic to try, or the Type Card).

Do not in the first meeting: explain all the science; use gene vocabulary; run any psychodrama (not in the first month at all); require anyone to join any activity (watching is full participation); fill every silence.

1.8 Twelve-week rollout

One meeting a week, 60-90 minutes. A guide, not a script. Topics are handbook chapters in plain language.

Week	Focus	New element
1	Emergency basics (safety first; see "The 12 Safety Rules")	Meeting format, intro ritual, Type Cards, closing words
2	Sleep	Breath Sync; ask one person to look at next week's topic
3	Nutrition basics	First report-back; Shake It Out
4	Craving: mapping triggers and waves	30 Circles
5	Isolation	Three-column exercise (trigger / feeling / what I did instead); introduce symptom index
6	Dopamine and reward	Celebration Circuit
Month 2	**Creative session** (Chapter 3; skip the role swap)	Music, memory ritual, short play
7	Sound and rhythm	The Hum
8	Neuroplasticity	Opposite Game
9	Family dynamics (often stirs the most; leave extra time)	Mirror Movement
10	Looking at a lapse without shame	Story Spine
11	Meaning without religion	Parallel Work
Month 3 Week	Optional first psychodrama Focus (Chapter 4; clinician present)	Only if readiness checklist is New element met
12	Review: who you are, in your own words	Optional phenotype assessment

After week 12, the group decides two things together: which topic to return to (usually the ones that created the most energy) and whether anyone is ready to co-facilitate. Weeks 13-24 can repeat or deepen. Add at most one new psychodrama module a month, never earlier than the readiness checklist allows.

KEY POINTS

Key points for Chapter 1

- Everyone speaks, everyone is greeted by name, no one is forced.
- Four-sentence introductions replace testimony; the story can have its own space.

- Types are self-descriptions, not genetic results.
- Acute withdrawal or psychosis comes first and needs medical care, not a meeting.
- Keep the closing words; keep the language honest about uncertainty.

2. Activity library

How to use it. Pick one activity per meeting, at a transition or to open the topic session. Read the room, choose, and explain that joining is optional. Take two minutes before the meeting to check cautions against who is coming.

Universal cautions (apply to every row)

- Make every activity genuinely optional, with a dignified way to sit out ("take the observer seat").
- Ask about injuries, pregnancy, heart or breathing conditions, and mobility before anything physical. Anyone with a medical concern checks with their clinician first.
- Never use touch, eye contact, or eyes-closed tasks as a requirement. For people with trauma histories, these can be activating. Always offer a version with no touch and eyes open.
- No one should take part while intoxicated or in withdrawal.
- Do not use competition to shame. Self-set goals and "nobody is out" rules keep it safe.
- If anyone is dizzy, in pain, panicking or dissociating: stop that person's activity, sit them down with water, and check in privately.

2.1 Match the activity to the room

If the room feels…	Try
Flat, people on phones If the room feels…	Jumping Jacks Countdown, Name Toss, Celebration Circuit Try
Tense or anxious	Breath Sync, Shake It Out, Slow Walk
New group, strangers	Two Truths One Thrill, What's Different, Name Toss
Isolated, withdrawn	Parallel Work, Compliment Lap, Mirror Movement
Warriors who need to move before talking	Push-Up Challenge, Warrior Sprint, Personal Best
Sages who need rhythm before speaking	Pass the Clap, The Hum, Mirror Movement
Too heavy, need laughter	Laughter Minute, Handshake Tournament, The Knot
Need to think again after heavy sharing	Opposite Game, Zip Zap Zop, 30 Circles
Only 2-5 minutes	Shake It Out, Laughter Minute, Breath Sync

If the room feels…	Try
Good weather and space	Silent Walk (or hold the meeting outside)
2.2 Activities	

Time is for the activity only. “Energy” is how activating it is: L low, M medium, H high.

ActivityWhat to do PurposeTimeMaterialsEnergyCautions

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Slow Walk Activity	Walk as slowly as possible for 3-4 min; facilitator calls “freeze” for 10 seconds. What to do Purpose End with one word about the body.	Slow down; notice body	5-7 min Time	Open floor L Materials	Energy	Balance, mobility; allow sitting. Cautions
The Hum	Everyone hums any note for ~2 min, then stops together on “three”. Notice the silence.	Shared rhythm, relaxation	3 min	None	L	Throat or voice problems: just listen. Some people feel exposed making sound; let them breathe along instead.

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Shake It Out	Shake hands, arms, whole body for 90 seconds to music. Then 30 seconds still.	Release tension	2 min	Music	L-M	Joint or balance problems: shake seated.
Pass the Clap	Clap travels around the standing circle, getting faster. Rebuild when it breaks.	Group rhythm; failure is OK	4 min	None	M	Hand or hearing sensitivity; startle response.
Mirror Movement Activity	Pairs face each other. One leads slow What to do Purpose movement ; the other mirrors; swap at 90 seconds.	Attention, trust	5 min Time	Space Materials	L-M Energy	Sustained eye contact and being Cautions watched can be hard; offer mirroring hands only, or looking at the other's shoulder.
Parallel Work	Everyone draws, writes, or colours quietly side by side; share only if wanted.	Calm company without pressure	15-20 min	Paper, pens, soft music	L	Make clear nothing needs to be shown. Do not interpret anyone's work.

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Telephone (Kernel edition)	A short affirming phrase is whispered down the line; compare the end result.	Laughter; messages shift in the retelling	8-10 min	None	L	Whispering close to someone's ear can feel invasive; pass by speaking low or written note.
Complime nt Lap Activity	One person sits in the centre; others have 60 seconds to say one specific, true observatio n each. No advice or questions. What to do Purpose	Being seen 8-10 min	Time	Chair, timer Materials	M Energy	Being the focus can be intense. Volunteer only; never rotate by force. Facilitator steps in if a comment is not kind or true. Cautions
Blind Name Walk	Eyes closed Playful or lowered, walk slowly, touch hands, guess who.	trust	8 min	Open floor M		**Skip with trauma histories or in a new group.** Touch is optional; eyes can stay open; trip hazards.
Jumping Jacks Countdow n	30 jumping jacks counting down; at zero, freeze and say one word.	Wake the room	3-5 min	None	H	Joint, back, heart and breathing conditions; offer arm-only version.

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Push-Up Challenge	Each person picks their own number and does it; cheer the last one going.	Self-set challenge	3-4 min	Floor	H	Wrist, shoulder, back problems; wall or knee push-ups. Never compare numbers.
Musical Chairs, Recovery Edition	When the music stops, whoever has no chair answers a light prompt and rejoins; no one is out.	Fun, easy sharing	8-10 min	Chairs, music	H	Mobility and falls; keep prompts light, never probing.
Warrior Activity	Three 15- What to do Purpose	Burn	5 min Time	Open Materials	H Energy	Injury and Cautions
Sprint	second all-out runs with walk-back recovery.	energy		outdoor or hallway space		heart risk; warm up first; participant s pick their own effort; medical clearance for anyone with known conditions. Not for the unwell.

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Lap Race	One lap round the building; winner picks next topic from a short list; walk back together.	Energy, small stakes	5 min	Outdoor or hallway	H	Same as sprint; offer a walking lap with equal prize.
Name Toss	Toss a ball or paper while saying someone's name; later add a positive word. A drop means five jumping jacks (optional) or just restart.	Learn names	5 min	Soft ball	M-H	Use soft objects; make jumping consequen ce optional; keep adjectives kind.
Two Truths One facts and Thrill Activity	Two true one thrill What to do Purpose you want to try; others guess the "want".	Light disclosure	10 min Time	None Materials	M Energy	Keep the "why" voluntary. Cautions
What's Different	In pairs, study each other for 30 seconds; one changes three small things; partner spots them.	Attention, playfulness	3 min	None	L-M	Eye contact; allow a variation facing sideways.

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Handshake Pairs Tourname nt	invent a handshake; pairs combine until the group has one chain.	Laughter	8 min	Open space	H	Touch is optional (use elbow bumps or air high-fives).
The Knot	Standing in a circle, hold two different hands across the centre; untangle without letting go.	Cooperativ e puzzle	10 min	8-15 people	M-H	**Physical contact and being stuck can trigger distress.** Offer observer role; stop if anyone is in pain; mind wrists and shoulders.
Zip Zap Zop Activity	Pass “zip”, “zap”, What to do Purpose “zop” with eye contact and pointing; errors mean a short silly penalty.	Attention switching	5 min Time	None Materials	M Energy	Penalties must be Cautions playful, never humiliating .
30 Circles	Turn as many of 30 blank circles as possible into objects in 3 minutes; share one with a neighbour.	Creativity, novelty	5-7 min	Paper, pens	M	None specific. Pressure-free.

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Opposite Game	Do the opposite of what the facilitator says; "switch" reverses the rule.	Practise stopping an automatic response	5 min	None	M	Keep instruction s physically easy.
Story Spine Activity	One sentence each in a fixed pattern ("Once upon a time… Every day… Until one day… Because of that… Until finally…"). What to do Purpose Rule: "yes, and".	Easy collaborati on	10 min Time	None Materials	M Energy	Steer away from graphic or triggering content. Cautions
Improv Machine	People join a "machine" with repeated movement and sound; speed it up or slow it down.	Group playfulness	8 min	Standing space	M-H	Touch optional; sound sensitivity.
Celebratio n Circuit	Everyone does their personal celebration and teaches it to their neighbour.	Joy, play	3 min	None	H	Someone may have nothing to celebrate that day: "or just do a funny walk".

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Personal Best	Set a 60-second micro-challenge (balance, wall sit, alphabet backward); try twice.	Self-competitio n	5 min	None	M-H	Physical limits; keep choices safe.
Laughter Minute	Fake laughing for one minute, then 10 seconds' quiet.	Release	1-2 min	None	M	Can feel forced or shaming; make it optional. Not for anyone who is tearful or fragile today.
Cold Activity	Splash cold Calm a What to do Purpose		3 min Time	Sink or Materials	M Energy	**Not for** Cautions

Breath Sync	**Seated. In for 4, hold 4, out for 6. Four rounds in silence. Each person says one word.**	**Settle the room; notice calm**	**3-4 min**	**None**	**L**	**Breath holds can cause dizziness or anxiety. Make holding optional; shorten the hold to zero if needed.**
Water Face Reset	water on the face or hold wrists under a cold tap, then one word.	surge of arousal		bowl		**people with heart conditions, arrhythmia s, or on medication s affecting heart rate without clinician agreement .** Use cool water, never ice on the face or immersion; dizzy or faint, stop.
Silent Walk	Walk outdoors in silence for 10 minutes, no phones; each shares one thing they noticed.	Attention, calm	15 min	Safe route	L	Fitness, weather, accessibilit y; route choice.
Barefoot Ground	Stand barefoot on grass for ~4 min in silence; one word at the end.	Present-moment attention	5 min	Safe grass	L	Glass, ticks, cold, diabetes, foot injury: keep shoes on if any concern.

Reasonable evidence: slow breathing, gentle movement and shared rhythm can reduce arousal and improve mood **[Established]** in general terms; claims that a specific activity produces a specific chemical in your group are **[Kernel hypothesis]**. **Group run or walk.** For fit groups with a safe route, the meeting can

happen on a walk. Keep the pace conversational, keep the introduction ritual short, and give everyone an easy way to step out or turn back. Skip it if anyone is medically fragile, in withdrawal, or still intoxicated.

KEY POINTS

Key points for Chapter 2

- One activity per meeting; match it to the room.
- Optional always, with a respectful way out.
- Never compete to shame; never force touch, eye contact or sound.
- Check injuries and medical issues first.
- Treat the “brain chemistry” explanations as hypothesis, not proof.

3. Creative sessions

What this is. A monthly, longer session (about 120 minutes) that builds something from the group’s own material: affirmations, music, a play, and a group sentence. The idea is a pottery class: you provide the clay and technique; the group makes the pot. Whatever they make belongs to them.

Start after the group has met several times. Always include a break. If the group is new, drop Blocks 4 and 6, and extend the play block.

3.1 Run sheet

Block	Time	What happens
1. Cheer section	0:00-0:15	Appreciation before anything difficult
2. Memory ritual	0:15-0:20	One word each becomes a sentence that belongs to tonight
3. Music round	0:20-0:45	Each person’s song and what it carries
4. Culture conversation	0:45-1:00	Favourites; why context changes substances
5. Playwright session	1:00-1:20	Write and perform a short play (or write now, perform next time)
6. Protocol assignment chain (optional)	1:20-1:30	One member teaches a short topic

Block	Time	What happens
7. Role swap testimony (optional; see Chapter 4)		Do not run without the Chapter 4 safeguards; usually leave it out
8. Closing cheer and sentence final 5 min Block	Time	Read the sentence again; What happens closing words

Why cheer first: people take in hard material better when they feel safe and valued. This is sensible practice, though the "brain chemistry" explanation is a **[Kernel hypothesis]**.

3.2 Block 1: Cheer section (three rounds)

1.**Arrival cheer.** Say each person's name ("Marcus is here!"); the group echoes it. Include yourself. 2.**One true thing.** You say one specific observation per person ("Sofia asked the question nobody else would"). The group echoes: "That is true." If you do not know someone well, "[Name] came back" is always true and enough. 3.**Group declaration.** Complete these lines aloud, overlapping is fine: "The hardest thing I've done this week is…" / "One thing I know about myself that I didn't know a year ago is…" / "The reason I keep showing up is…" Do not summarise or comment. End with "That's why we're here. Let's go."

Extra moves for high-energy rooms: Name Chant (the group chants one volunteer's name three times); Air Guitar Solo (10 seconds of air instrument for your thrill); Appreciation Sprint (pairs, 60 seconds each); Victory Lap (anyone with a milestone this week takes a lap while the group claps). All optional.

3.3 Block 2: Memory ritual

Everyone writes the first word that comes to mind, without explaining it. Combine the words in the order given into one sentence. Read it exactly as it comes out. It will probably not make sense ("Quiet fire Tuesday telephone forgiven mountain cold"). Do not interpret it. It exists only for this meeting; read it again at the close.

3.4 Block 3: Music round

Each person chooses one song that means something to what they are working on now. Play 60-90 seconds. The person says one sentence: what the song carries for them. Others say what they heard (not critique, not taste). If there are no speakers, hum it or describe it.

- **Triggering songs.** A song linked to active use, trauma or loss is information, not a mistake: "That song has weight for some people in this room. We hold it." Offer a break.
- Let people pick what they need: "What sound do you want around you right now?" counts as an answer.
- Ask for music from before the substance if the heaviest songs are too much.

- Ask people to avoid choosing songs they know will pull them toward use, and tell them it is fine to skip.

3.5 Block 4: Culture conversation

The point: substances live inside history and culture, and understanding context turns shame into literacy. This does not excuse harm or make anything safe.

Favourites round (5 min). One-word answers: favourite film, game, food, most intense physical experience, best meal. Preferences are useful information about what a person's nervous system seeks, but do not diagnose from them. **[Kernel hypothesis]**

"Can you have a beer?" Ask why, biologically, not morally. A fair answer: differences in alcohol metabolism **[Established]** (for example, ADH1B and ALDH2 variants that cause flushing and make heavy drinking unpleasant), reward-system differences **[Emerging]**, conditioning (what drinking was paired with: relief, belonging, escape), and current state. The person who can leave half a beer is not morally superior. Do not guess anyone's genotype.

Context matters, examples to draw on:

Example	Point
Coca-Cola began in 1886 with a coca extract and caffeine; by 1903 the cocaine was removed (the company says the product used decocainised extract)	Cocaine was once a respectable medicine and tonic; marketing and cultural permission shape how we see a drug
Coca leaf chewing in the Andes vs. refined cocaine	Same plant source, very different dose, speed and risk. Purifying and concentrating a substance changes harm

Opium trade history; Prohibition (1920-1933) Supply, markets and law shape harm as much as the molecule

Therapeutic use vs. street useSetting, dose, supervision and aftercare change outcomes. Note: regulatory status of therapeutic psychedelics is changing and should not be quoted from memory

Keep it factual: do not role-play farmers, dealers, or members of cultures you are not part of; it slides into mockery.

The art of the possible (optional). People in recovery or with intense nervous systems who built something remarkable: combat-sport champions, musicians known for precision, scientists, and recovery writers. Use real, checkable examples and avoid claiming that any historical person "had" a genotype or diagnosis they never had.

3.6 Block 5: Playwright session

Three rules:

1.**Everyone contributes** something (a line, a name, a prop, a sound effect). Not everyone performs. 2.**At least one true thing** is in the play, even if it is fiction or comedy. 3.**What happens in the play stays in the play.** Nothing said in a character is used against the writer afterward.

20-minute process (Option A).

Minutes	Step
0-3	Premise: one sentence from the room
3-8	Characters: each person names one who belongs in the story
8-13	Three moments: before it changes, when it changes, after. One line each
13-16	Casting: volunteers first. Playing the opposite of yourself is often useful (see cautions in Chapter 4)
16-20	Perform. It will be rough. That is the point

Option B. Write tonight, perform next meeting after 10 minutes' rehearsal.

Prompts: "A person wakes up and something is different." / "Two people who have never met discover they share one thing." / "Something thrown away gets found." / "The last thing before everything changed." / "A conversation that should have happened years ago, finally happens."

Debrief questions (always use them; catharsis without reflection leaves people open):

- To the actors: what was hardest to say or hear? What surprised you?
- To the audience: when did it feel most true?
- To everyone: what do you want to take with you? What do you want to leave in the room?
- Step out of character ritual: shake out hands and arms, say your own name.

3.7 Block 6: Assignment chain (optional)

One member studies one short topic and teaches it next meeting: what it is, what it does, why it matters, what they took from it personally. They assign the next person. It is a role with status, not homework.

If someone does not do it: no shaming and no "demonstration" of what neglect costs. Say, "That happens. Do you want it again next time, or shall we swap?" Keep it voluntary and low pressure. (The source suggests a staged neglect demonstration; it risks turning a missed task into public shame, so it is not used here.)

3.8 Closing

Read the Memory Ritual sentence again. One word each for what happened tonight. On three, everyone says at once what they are taking away. Then the closing words from Chapter 1.

3.9 Secrets and avoidance (background for facilitators)

Keeping a secret takes ongoing effort and is often linked to stress and shame; people commonly overestimate how badly disclosure will go. The group does not require disclosure. It offers safety so that sharing can be chosen. Fiction can carry a truth that is too hard to say directly. Some secrets, such as legal or safety matters, have real consequences and are different from shame: never press for these, and tell people honestly the limits of group confidentiality (risk of harm, legal duties).

KEY POINTS

Key points for Chapter 3

- Appreciation first; hard material later and only when trust exists.
- Everything is optional; keep fiction as a safe container.
- Always debrief a play and always de-role.
- Skip optional heavy blocks with new or fragile groups.
- Use accurate history; avoid role-playing real cultures or claiming people's genotypes.

4. Psychodrama and script work

4.1 Read this first

Psychodrama is a clinical method. It was developed by Jacob Moreno in the 1920s, and trained practitioners use structured enactment, role reversal and de-roling. Evidence for psychodrama and related approaches in substance use is **[Emerging]**; the explanation that enactment "reaches the limbic system" is a **[Kernel hypothesis]**. Enactment can bring up strong feelings, memories of trauma, and cravings.

FOR CLINICIANS

For clinicians and facilitators. We recommend that anything beyond the light script work in 4.5 is run by, or with, a **trained clinician** (psychodramatist, drama therapist, or licensed therapist experienced with trauma and addiction). A peer facilitator can still support the group, but should not lead high-activation work alone. If you are not trained, use Chapters 1-3 and the light script work in 4.5.

4.2 Readiness checklist (all must be "yes")

☐ The group has met at least 6 times, and people know and trust each other. Not in the first month. For the full-cast drama (4.8), the group has done at least 3 earlier psychodrama sessions, and not before about month 4.

- ☐ You know each person's current stability. Anyone in acute crisis, recent bereavement, medical instability, active withdrawal, psychosis, or intoxication is offered to observe or sit out. Participants with serious trauma histories talk to a clinician before taking part.
- ☐ A clinician or a trained second person is present.
- ☐ A **separate support person** (not the facilitator) is free to sit with anyone who needs grounding. The facilitator cannot run the scene and hold a distressed person.
- ☐ The stop word is explained and agreed: **ANCHOR**. "If anyone says it, everything stops immediately. No questions. We breathe. We check in. Then we decide together whether to continue."
- ☐ You have read the entire module, not just the script.
- ☐ The session will end with the **Healing Enactment** (4.9). Never end in the middle of the pain.
- ☐ 988, 911 and a quiet space are available. Everyone knows where the exits are.

If any is "no," run a standard meeting or a Chapter 2 activity instead.

4.3 Consent and trauma-informed rules

- **Opt in each time.** Describe in plain words what will happen, including the hardest part, before anyone agrees. Do not ask people to decide in the middle of a scene. Observing is full participation.
- **Pace and choice.** People can step out, pass, move away, stay seated, keep eyes open, or change roles at any time. No pressure, persuasion or applause for "going deeper".
- **No touch, no forced eye contact.** If any scene involves touch (for example hands on shoulders), ask first, and offer a no-touch version.
- **Fiction, not confession.** Use made-up names and roles. Do not re-enact a real event involving real people. Never ask someone to play their own abuser or the person who harmed them, or to play a real person who died.
- **Stay in the present.** Keep scenes short; do not dig for new memories. Do not interpret what people did or said.
- **Confidentiality.** What is said in the room stays. State the limits: danger to self or others, and legal duties.
- **Stop signs.** Stop and ground if someone: goes very still, stares, stops responding, shakes, hyperventilates, loses track of where they are, or says ANCHOR. Ask: "Are you playing the character right now, or are you in it?" If they are in it, stop.
- **Grounding script.** "You are in this room. It is [date]. You are safe. Name something you can feel right now. Name five things you can see." Use slow breathing and water. For a suicidal statement, call 988 or 911; do not leave the person alone.
- **De-role every time.** Everyone shakes out hands and arms, says their real name, and says one thing about the present ("I'm [name], it's Tuesday, I'm in this room").

- **Aftercare.** Check in privately with anyone who struggled. Offer a follow-up call within a day or two. Give a referral list. Let people know that feelings and cravings after a heavy session are common, and that they should contact their sponsor, clinician, 988 or SAMHSA if it persists.
- **Cravings.** Enactments about substances can trigger cravings. Make a plan with each person for the next few hours. Never enact use in a way that includes real substances or paraphernalia.
- **Frequency.** At most one session a month. Between sessions the group needs ordinary meetings to integrate.
- **Where it should not be run:** with people who are actively using in the room, in crisis, or with untreated serious psychiatric symptoms; or without the support people above.

4.4 Which module, when

Order	Module	Needs
First psychodrama session	Stigma simulation (4.6), or the light version of object work (4.5) only if a clinician agrees	Readiness met; clinician present
Second	Cliché deconstruction (4.7)	Same
Later (not before about month 4 and 3 sessions done)	The full-cast drama (4.8)	Clinician **must** lead
Every session	Healing Enactment (4.9) at the end	Non-negotiable

The source schedule fits all five modules into 90 minutes. That is too much for most groups. Run one or two modules per session, with a break, a debrief and a proper close.

4.5 Light script work (lower activation)

The seven plays below are “enacted recovery” for the Playwright block. They are lower risk than psychodrama because they are fiction, scripted, and short (15 minutes), but they can still hit hard. Apply 4.3 (consent, de-roling, support person). You can present two or three options and let the group choose.

Play	Cast	Story and beats	Handle with care
The Last Conversation	Self Past, Self Now, The Substance	Younger and later versions of one person try to reach each other while the Substance charms and interrupts. Ends with the Substance setting down what it carries and “today you just stay in the room.”	Whoever plays the Substance: charming, not scary. Cast someone who is steady, not someone recently struggling.

Play	Cast	Story and beats	Handle with care
The Job Interview Play	Applicant, Interviewer, The Past (voice), The Future (silent) Cast	Applying for the life you want; the interviewer asks honest questions; the Past is a reference. Story and beats "The interview was the job."	Lowest-risk starter play. Handle with care
The Museum of Choices	Visitor, Guide, two living Exhibits	A tour through your choices (first use; the maintenance period) with a guide who explains without judging. You take one thing from each.	Do not use figures like "40% of mental resources" as fact; it is a character's line.
The Party	Newcomer, Host, Old Friend, The Ghost (silent), ensemble	A person arrives sober; each guest plays a past self; the Ghost, the old self, tempts, then leaves with them.	Offers, drinks (use juice), and pressure can be activating. Cast the Ghost lightly.
The Handoff	Stranger A, Stranger B, optional Object	Two strangers hold the same kind of object with different meanings; trade perspectives and, perhaps, the objects.	Low risk.
The Verdict	Defendant, Judge, Prosecutor, Public Defender, Witness	Trial of the self; comic public defender; witness who loved you; verdict: accountable, not "broken".	**Witness role can hit hard**: use a volunteer, warn them. Do not have the Prosecutor play the real person who harmed anyone.
The Letter	Writer, The Substance, Postal Worker	A letter to the substance and its reply. The Substance admits what it gave and what it cost.	**Highest craving risk.** The tone "I miss you too" can romanticise use. Do not run in early recovery without a clinician, and make sure the reply ends with a clear no ("I won't ask you to come back").

Representative excerpt (The Last Conversation, shortened) SELF PAST (seated, The Substance behind them): I'm doing fine. I want that on record. **SELF NOW** (at the edge): You wrote the rules down and then you lost the paper. **SUBSTANCE:** You don't need to hear this. You've got things to do. **SELF NOW:** I'm not here to tell you what you did wrong. I'm here to tell you that you make it. And that it costs something. **SELF**

PAST: And after? **SELF NOW:** I'm standing here. That's what after looks like. *(The Substance sets down whatever it was carrying. Silence.)* **SELF PAST:** What do I say to the people I… **SELF NOW:** Not today. Today you just stay in the room.

Representative excerpt (The Party, scene 5, shortened)

GHOST: You could just… **NEWCOMER:** (turns to face it) No. **GHOST:** It would feel… **NEWCOMER:** I know exactly how it would feel. I know the first twenty minutes very well. **GHOST:** You're sure? **NEWCOMER:** (the real pause) Yeah. I'm sure.

Casting and staging. Costumes can be simple: a jacket worn differently, a clipboard, a hat. Cast against type only by choice. Roles that are close to a person's own harm (the dealer, a parent who drank, an abuser) are offered, never assigned. Let the quietest people take the smallest parts if they want them.

Debrief questions (all plays): What was hardest to say or hear? What surprised you? When did it feel most true? What would you tell the character you played? What do you want to take, and what do you want to leave here?

4.6 Stigma simulation (mirrors and lotion)

Purpose: take the shame out of labels by showing they are shared.

1.**The label.** Read aloud, slowly, things people say about people who use ("You can always tell an addict," "They brought it on themselves," "Once an addict, always an addict"). Say you read them to examine them, not because they are true. Ask: "How many have you heard about yourself this month?" Let the silence work. 2.**The mirror.** Everyone looks at their own skin in a small mirror (or phone camera) for 30 seconds and finds something they would normally hide. Notice the urge to fix, pick or cover it. Everyone has one. "There is no 'meth face' in this room. There are nervous systems doing what they do under stress." 3.**The repair.** Pass lotion or oil. Apply it to the spot you found, with quiet instrumental music, for about 60 seconds. "Healing is not dramatic. It is someone putting lotion on their face in a room full of people doing the same thing."

Materials: small mirrors, lotion or oil, calm music. Check for skin allergies and fragrance sensitivities; offer water or a hand-only option. Be careful with people who have skin picking, body-image difficulties, or visible scars. Offer the observer role.

Reframe card (read aloud or post).

Old label	More accurate
"Meth face. Look at what you did to yourself."	Stimulants can reduce skin blood flow and drive repetitive picking; chronic use and poor sleep and nutrition harm skin. These are body effects, not character.

Old label	More accurate
"You can always tell an addict."	The body shows long stress (poverty, caring, illness, war). Looks do not identify addiction.
"They brought it on themselves."	Genes, early experience and environment all shape risk. People do make choices and also carry responsibility; both are true. Blame does not help recovery.

4.7 Cliché deconstruction ("forgive and forget")

Purpose: look at the pressure of recovery slogans ("let it go," "forgive and forget," "one day at a time") and make room to keep what helps and refuse what hurts. Needs red stickers or notes and a marker. About 20 minutes.

1.**Write (5 min).** One word on a red sticker: something done by you or to you that you were told to forgive and forget. Not shown to anyone. 2.**Wear it (5 min).** Stick it where you choose. No one reads them aloud. "Everyone is carrying one." 3.**Truth about forgetting (3 min).** "Forgive and forget" can mean "act as if it didn't happen." Forgiving is possible but is not required. Memories do not simply vanish; what often changes over time is how strongly they hurt and what we do with them. 4.**Release (5 min).** Everyone chooses whether to keep wearing it or to set it down somewhere in the room. Either is fine. Do not throw it away, tear it up or force a decision.

Debrief: "If you set it down, where and why?" "If you kept it, what does keeping it mean today?" "In one sentence, what is the difference between forgiving and forgetting?" Do not seek agreement.

Cautions. Do not pressure forgiveness, especially for harm done by an abuser or an unsafe person. Safety and boundaries matter more than forgiveness. Those with recent loss or abuse may prefer to observe.

4.8 Object work and the full-cast drama (clinician-led only)

These two are the highest-risk items in the source. We include summaries so that clinicians can decide.

Object ritual (a stand-in object to disarm cues). The source uses an everyday stand-in (for example, baby powder) for the "glamour" of a substance and ends with putting it in the bin. Cue exposure of this kind can ease or **trigger** cravings **[Emerging]**. We advise:

- clinician-led, opt-in, and not in early recovery or when anyone has recently lapsed;
- never use realistic paraphernalia, pills, or anything that mimics a use ritual, and never "draw a line" or act out preparing a substance;
- use neutral objects and focus on questions: "What did the object promise? What did it actually cost? What would you like it to mean now?"
- ask first what each person's strong triggers are, and keep those out;

- end with grounding and a plan for the next few hours.

Full-cast drama ("The Bust"). Everyone gets a role card: dealer, first-time user, established user, friend who watched, family member, "the system", and the one person who said the right thing. Four scenes are each played twice with a role swap, and the last scene is "the other ending." The facilitator is the director and never plays a part. Role reversal is the main tool.

Specific risks: people may play someone who harmed them; people can experience the dealer role as empowering or frightening; the "bust" scene can re-activate legal or arrest trauma; family roles can bring up grief. Rules:

- clinician **must** lead, with a separate support person;
- fictional names and no real events; no one plays a real person from their life;
- opt in for each role; offer to be the director's assistant or audience instead;
- cast no one as a dealer or a harming figure if that mirrors their own history;
- stop at "FREEZE" if anyone is distressed, using the question in 4.3;
- always play scene 4 ("the other ending") and the Healing Enactment, and de-role fully.

4.9 Healing Enactment (always last)

Purpose: finish on something real and small, not on the pain. Each person shows one thing they actually do (not a goal), using their body, without explaining first, then says what it is.

Examples: drinking a full glass of water; making the bed; taking prescribed medication or supplements as advised; the morning walk; calling one person; sitting with a craving for three minutes; writing down one thing done right; eating breakfast.

Close with: "This is what recovery looks like. It looks like this." Then the closing words (Chapter 1). Provide time for quiet sharing, a break, and a clear end to the session.

4.10 Role swap testimony (optional; not recommended without a clinician)

The source describes: one volunteer wears a necklace representing a substance identity or label; they describe how it feels; a second volunteer wears it and says what they see "from outside"; the group goes to an "origin layer" (who first modelled using, and what pain they carried); and ends with the necklace removed and group messages to the first volunteer.

It can reduce shame by changing perspective, but it can also induce shame, blame, or grief, especially in the "origin layer". If used, require everything in 4.2 and 4.3, plus:

- the facilitator does **not** take part; a separate support person watches the room;
- do not explain anyone's parents or family through genes or biology ("your mother drank because her COMT variant…"). The source gave invented explanations of this kind. Nobody can know this from the outside, and it can hurt or mislead;

- keep the origin layer to private reflection (no names, no speaking aloud unless chosen);
- end only after the liberation step (necklace off, what do you want to tell this person?) and the Healing Enactment.

4.11 For families and sponsors

If a loved one asks you to attend a session, you are not a participant in their recovery by being their audience. Ask the facilitator what will happen. You may be asked to watch, not to act. Do not use a scene to confront someone. Support, not surprise.

KEY POINTS

Key points for Chapter 4

- Psychodrama is a clinical method; get a trained clinician for anything beyond light script work.
- Check readiness every time: trust, stability, support person, stop word, Healing Enactment.
- Opt in, no touch, no real events, no playing one's own abuser.
- De-role and aftercare every time; watch for cravings.
- The object ritual, the full-cast drama and the role swap are clinician-led only.
- Never end in the middle of the pain.

5. Movement and dance

What this is. A practical guide for people who want to go to a club or festival, or a dance night, and be present on the floor without the phone, the substance, or the fear of looking foolish. Substances can dull self-consciousness. They do not teach you how to move. This part gives you a few simple tools so self-consciousness has less to hold onto.

Is it safe for you? Dancing for hours is real exercise. If you have heart, breathing, joint, or balance problems, are pregnant, or take medicines that affect heat, hydration or heart rate, check with your clinician. Early in recovery, a loud, late, drug-heavy venue may be a high-risk cue. Consider daytime events, alcohol-free events, or home and group dancing first. See "The 12 Safety Rules".

Emergency box. Call 911 or go straight to the venue's medical team for: collapse or unresponsiveness; confusion or severe agitation; seizure; very hot, flushed or dry skin; chest pain; severe trouble breathing; or someone who seems "off" and cannot be roused. If opioid overdose is possible, give naloxone and call 911. Naloxone does not reverse all sedatives. Do not leave a drunk or sedated person alone. Fentanyl, nitazenes, xylazine and medetomidine can contaminate street drugs, so call for help whatever someone says they took. Do not assume a headache or dizziness is "just the air". If in doubt, get medical help.

5.1 Arrival: walk the room first (5 minutes)

Do this before the bar, before the dance floor and before the music pulls you in.

- ☐ Find at least two **exits**. Note the ones that are not the entrance. In a crowd emergency the entrance is the worst place to head.
- ☐ Find the **medical or first-aid** station.
- ☐ Find **free water** and the quickest route from where you will stand. Check whether it needs your own cup.
- ☐ Find the **bathrooms** (there are often two sets; the second may be quieter).
- ☐ Find a **rest area**: chill-out room, outdoor terrace, ledges, seats.
- ☐ Notice **air**: better near doors, outside walls, vents, and the DJ booth; worse in the centre of a packed room.
- ☐ Count steps (in your body, not just your head) from your spot to water, bathroom and exit.
- ☐ Pick a **buddy** and agree a meeting point and a leave-together plan.

Crowd density. Arm's length between you and strangers is a good target. Shoulder to shoulder means look for edges and air. If you cannot raise your arms and the crowd moves as one, that is dangerous: go to the edge or leave.

Air quality. In a crowded room with poor ventilation, carbon dioxide can build up, which can add to headache, tiredness and fogginess, along with heat and dehydration. Going outside for 10 minutes is a good first step. This is a plain practical point, not a reason to ignore symptoms.

5.2 Pace, water, food and rest

- Sip water regularly; do not wait until you are very thirsty. Do not force huge volumes. Over-drinking can cause its own problem (low sodium), especially in hot settings or with some medicines. Ask your clinician if you take medication.
- Eat before you go and have snacks (fruit, nuts). Long dancing burns a lot of energy.
- **Rest before you have to.** Plan a 10-minute break about every 60-90 minutes (outside or in the chill-out room), not only when your legs give out.
- Go to the bathroom early rather than in an emergency.
- Watch your drink; do not accept drinks you did not see poured. Do not leave a drink unattended.
- Take your own plan for lapse risk: a sober buddy, a call you can make, naloxone if you or a friend use opioids, and permission to leave at any time.
- Heat: stop and cool down if you feel dizzy, nauseated, confused, or stop sweating while hot.
- Warm up hips and calves for fast footwork; stretch afterwards. Stop for any sharp pain.

5.3 The foundation: three things every body can do

Weight transfer. The single most useful principle. Instead of bobbing in place, shift your weight fully from one foot to the other on the beat. Stand feet shoulder-width, put all your weight on the right foot, shift all of it to the left, then do it on the beat.

Find the beat. Listen for the kick drum, the lowest, most physical hit; feel it in the chest. If you cannot hear it, watch the DJ's head, or mirror one comfortable-looking person's feet for 30 seconds. Half-time is fine. Pick a beat and commit.

Three universal moves

Move	How	Hands
Bounce	Feet shoulder-width, knees soft, let knees dip on each beat; shift weight left and right every two beats	Loose at sides, one hand on waist, avoid crossing both arms across your chest
Two-step	Step right (1), bring left to meet it (2), step left (3), bring right to meet it (4); add a small hip push	Let arms swing opposite the stepping foot; keep them floating, not gesturing
Lean	From the hip, lean forward about 10 degrees, weight on balls of feet, nod with the beat; works at 130-150 BPM	Anywhere comfortable; crossed arms are fine here
5.4 Borrowed moves		

- **From tango: frame, committed step, pause.** Lift your breastbone (not your chin), shoulders gently back and down, weight slightly forward. Make every step land fully. In a breakdown, **freeze** for a beat, then move on the return of the kick. It looks deliberate and feels great.
- **From cha-cha: the "and".** There are beats between the beats. Small, precise movements often say more than big, vague ones. Let the hip move because the weight moves.
- **The stomp (from African and Afrobeats traditions).** Weight on one foot, lift the other a couple of inches, bring it down with full weight on the kick. Swing the opposite arm as you stomp. **Mini-stomp** for tight crowds: lift and drop only the heel.

5.5 Match the move to the music (BPM map)

Tempo	Typical music	Try	Avoid
70-95	Hip-hop, R&B, reggaeton	Slow sway, deep knee bend, hips lead	Fast footwork, jumping

Tempo	Typical music	Try	Avoid
96-115 Tempo	Afrobeats, amapiano, Low, weight forward, dancehall Typical music	body roll, stomp on Try heavy percussion	Upright “club bounce” Avoid
116-126	Deep and soulful house	Languid two-step, tango frame and pause	Rushing; too many moves
126-134	House	Four-on-the-floor bounce, the jack (knees in on 1 and 3, out on 2 and 4), body roll	Big gestures unconnected to the beat
134-145	Techno, trance	Lean, small steps, head nod, arms rising on builds	Over-working; the music does the work
145-170	Hard techno, gqom	Full stomp, torso forward	Soft bouncing
160-180	Drum and bass, jungle	Move to the half-time kick, not the fast breakbeat breakbeat	Stepping on every

5.6 Replace the phone

The phone on the dance floor is often a shield: it gives you something to be busy with. One video is documentation; twelve is avoidance. Put it away (silent, screen down, in a pocket or bag). Alternatives: a water bottle or soda in one hand, a hand on the opposite elbow, mirroring the person you came with, moving to the edge to find the beat before stepping onto the floor.

What really looks wrong: arms flailing with no relation to the music; continuous fast head- shaking; stepping without shifting weight; filming at eye level for long stretches; freezing in the middle of the floor while you “assess”. **What does not look wrong:** dancing alone; eyes closed; the same small move for hours; not knowing the words; moving differently from the people next to you; sweating. **The one rule: commit.** A small move done completely beats a big move done halfheartedly.

5.7 Group moves for people who are not ready to dance alone

Move	How	Care
Conga line	Step, step, kick, step, step, kick; hands on the waist of the person ahead; join at the back; best at 100-130 BPM	Light hands; do not drag anyone in. Three people make a line. It is the easiest route into dancing

Move	How	Care
The train Move	Hands on shoulders (not neck Ask first; shoulders only or hips) of the person in front, light, synchronised How bounce	Care
Electric Slide	Four-wall line dance: slide right, slide left, step back, quarter-turn	Join at the end of a row; watch one cycle first
Shoulder groove	Hands lightly on neighbours' shoulders in a circle, shared light press on the beat	Consent first; stop if anyone pulls away
Mirror matching	Match the groove of someone near you instead of showing yours	Free, and respects the other person
Nesting (Russian doll)	One person loosely holds another from behind and matches their groove	Only if both want it; the person in front steps out whenever; no grip

Always: touch is by invitation, and "no" or a step away is a complete answer. If you are asking, ask with your body and expect a clear response.

5.8 Move library (very short)

Use this as a reference, not as homework. Each came from a community and a moment. Try one at a time, at the right tempo.

Era / scene	Examples	Notes
1970s-80s	Robot, Moonwalk, Running Man, Roger Rabbit, Worm	Statement moves. Do them once, fully. The worm is a floor move; avoid dirty or crowded floors
1990s	Cabbage Patch, Butterfly (legs), Humpty Dance, Tootsee Roll, Kid 'n Play (pairs), Macarena	Joyful and sincere. Often the easiest way into a group
2000s-present	Dougie, Nae Nae, Floss	Generational; slower grooves
Latin	Merengue march (step in place with hip), cumbia step, salsa basic	The hip-on-every-step principle transfers anywhere
The spin	Pivot on one foot, pull arms in to speed up, spot a point, land and hold	Use on a phrase change; spot to avoid dizziness; mind space and others

Era / scene	Examples	Notes
Voguing and ballroom Era / scene	Old Way, New Way, Vogue Femme Examples	From Black and Latino LGBTQ+ ballroom culture; learn the history and give Notes credit
UK and electronic	Cutting shapes (sharp positions held a beat), Melbourne Shuffle (T-step, X- step: heel-toe glide), DnB step and skank, hakken (alternating leg kicks at gabber tempos), muzz, dubstep “drop lock”	Fast footwork and hakken are high impact: warm up, stretch, pace and re-fuel
Folk percussion	Clog and Irish step	Heel-toe control and a still upper body help shuffle and hakken footwork

5.9 Bonfire and Plant (optional style notes)

Some people, especially when elevated on a platform, tend toward one of two styles: **Bonfire** (reaching upward, expanding, seeking the crowd’s eyes) or **Plant** (grounded feet, soft knees, fluid upper body, eyes soft or closed). Both are fine. Use them as a way to find your own style, not a label. If you go up on a box or platform: it must be safe and allowed; step up only if you feel secure; come down before you tire; invite someone up with you.

5.10 When the floor goes quiet: the intergenerational rescue

When energy drops and people sit, do not wait for someone else. Notice the older person at the edge who clearly knows the music. Make eye contact, smile, and offer a hand. If they join, **mirror their groove**, not yours. They are your teacher. Then start a conga line or a train, stay on the floor, and let others come. The point is respect and inclusion: older dancers carry the original moves, the history, and a lot of practical wisdom about pacing.

5.11 What dancing does for recovery

Regular movement and dancing improve mood, fitness, sleep and social connection **[Established]**. Claims that a specific dance move produces particular brain chemicals, and the figures for calories burned (the source estimates 250-700 per hour depending on style) are rough and vary a lot **[Emerging]**. Treat them as indicative. The Kernel frames dance as part of the **natural architecture** of reward, a substance-free source of rhythm, connection and effort **[Kernel hypothesis]**. Many people find it works best alongside, not instead of, treatment and other supports. Dancing is not a substitute for medical care, and it does not make anything “safe”.

5.12 For group leaders: dance in a Kernel group

- Start in the meeting room: Shake It Out, Pass the Clap, Mirror Movement, then a short “dance floor” session with music at three tempos.
- Teach the three universal moves and the one rule (commit). Offer a seated version.
- Hold an occasional sober dance or conga night. Offer free water, quiet space, and an exit plan.
- Debrief: what did you notice about your body? What did you do with your hands? What would you try at a real event?

KEY POINTS

Key points for Chapter 5

- Walk the room first: exits, water, medical, bathrooms, rest, air.
- Rest early; sip water, do not over-drink; eat.
- Weight transfer, the beat and commitment beat fancy moves.
- Put the phone away, and use the conga or train if you are shy.
- Touch is by invitation only.
- Venues can be risky cues in early recovery: bring a buddy and a plan.